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Vol. I

TRANSCRIPT OF RECORD

Supreme Court of the United States

OCTOBER TERM, 1942

No. 299

JERSEY CENTRAL POWER & LIGHT COMPANY,
PETITIONER,

vs.

FEDERAL POWER COMMISSION

No. 329

NEW JERSEY POWER & LIGHT COMPANY,
PETITIONER,

vs.

FEDERAL POWER COMMISSION

ON WRITS OF CERTIORARI TO THE UNITED STATES CIRCUIT COURT OF APPEALS FOR THE THIRD CIRCUIT

PETITIONS FOR CERTIORARI FILED { AUGUST 13, 1942.
AUGUST 22, 1942.

CERTIORARI GRANTED OCTOBER 12, 1942.

TRANSCRIPT OF RECORD
VOLUME I.

IN THE

United States Circuit Court of Appeals

For the Third Circuit

No. 7256 October Term, 1939

JERSEY CENTRAL POWER & LIGHT COMPANY

Petitioner

v.

FEDERAL POWER COMMISSION

Respondent

No. 7257 October Term, 1939

NEW JERSEY POWER & LIGHT COMPANY

Petitioner

v.

FEDERAL POWER COMMISSION

Respondent

PETITIONS FOR REVIEW FROM AN ORDER OF THE FEDERAL POWER COMMISSION

Original Transcript of Record Filed December 29, 1939

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UNITED STATES OF AMERICA
FEDERAL POWER COMMISSION

Commissioners:
Clyde L. Seavey, Acting Chairman; Claude L. Draper, Basil Manly, John W. Scott.

June 7, 1938.

Docket No. IT-5518

In the Matter of: New Jersey Power & Light Company and Jersey Central Power & Light Company

I.

ORDER TO SHOW CAUSE

(Entered June 7, 1938)

It appearing to the Commission that:

(a) New Jersey Power & Light Company and Jersey Central Power & Light Company are public utilities subject to the jurisdiction of the Federal Power Commission;

(b) The New Jersey Power & Light Company, on March 11, 1938, allegedly acquired 341,350 shares of the common stock of Jersey Central Power & Light Company without first having secured the approval of the Commission as required by Section 203(a) of the Federal Power Act.

(c) The Federal Power Act, in Section 203(a),

provides that no public utility shall purchase, acquire, or take any security of any other public utility without first having secured an order of the Federal Power Commission authorizing it to do so;

The Commission *orders* that:

The New Jersey Power and Light Company submit in writing under oath on or before June 24, 1938, detailed information concerning its reported acquisition of said 341,350 shares of common stock of Jersey Central Power & Light Company in apparent violation of Section 203(a) of the Federal Power Act and, on or before said above date, show cause, if any, why this Commission should not proceed to enforce the requirements of said Act.

By the Commission,

LEON M. FUQUAY,
Secretary.

II.

ANSWER OF NEW JERSEY POWER & LIGHT COMPANY TO ORDER TO SHOW CAUSE

(Filed June 24, 1938)

New Jersey Power & Light Company, the Respondent, hereby makes return to the Order to Show Cause issued by the Federal Power Commission under date of June 7, 1938, in the above entitled matter as follows:

1. Respondent, denying, as hereinafter set forth, that Jersey Central Power & Light Company is a public utility subject to the jurisdiction of the Federal Power Commission and therefore denying jurisdiction of the Federal Power Commission over the purchase by Respondent of any securities of said Jersey Central Power & Light Company, sets forth and avers for the information of the Federal Power Commission the following facts:

On March 14, 1938, Respondent, after obtaining the approval of the Board of Public Utility Commissioners of the State of New Jersey by decision dated March 11, 1938, acquired 341,350 shares of the Common Stock of Jersey Central Power & Light Company. Attached hereto marked Exhibit "A" and made a part hereof is a copy of said decision of said Board of Public Utility Commissioners. All of the conditions contained in the aforesaid decision of the Board of Public Utility Commissioners, dated March 11, 1938, have been complied with.

2. On information and belief Respondent avers that Jersey Central Power & Light Company does not own or operate any facilities for the transmission of electric energy in interstate commerce, nor does it own or operate

any facilities for the sale of electric energy at wholesale in interstate commerce, nor does it own or operate any facilities of any kind subject to the jurisdiction of the Federal Power Commission; that the facilities of Jersey Central Power & Light Company are used solely for the generation of electric energy, in local distribution within the State of New Jersey and the transmission of electric energy in intrastate commerce within the State of New Jersey. Respondent is, therefore, advised by counsel that Jersey Central Power & Light Company is not a public utility subject to the jurisdiction of the Federal Power Commission and verily believes the same and therefore denies that Jersey Central Power & Light Company is a public utility as defined by the Federal Power Act.

3. Respondent is advised by counsel and verily believes that no approval of the Federal Power Commission was required by law to the acquisition by Respondent of the shares of stock of Jersey Central Power & Light Company, as hereinbefore set forth, and denies that it has violated Section 203(a), or any other provision, of the Federal Power Act in connection with the acquisition of stock of Jersey Central Power & Light Company.

Wherefore, Respondent respectfully requests that the Order to Show Cause issued in the above entitled proceeding, under date of June 7, 1938, be vacated, annulled and dismissed.

NEW JERSEY POWER & LIGHT COMPANY
By H. B. ALLEN,
Vice President.

Signed and dated this 23rd day of June, 1938.

State of New York,
County of New York, ss:

H. B. Allen, being duly sworn, deposes and says that he is Vice President of New Jersey Power & Light Com-

pany and that the facts set forth in the foregoing answer are true and correct to the best of his knowledge, information and belief.

H. B. Allen.

Sworn to before me this 23rd day of June, 1938.
Dorothy K. Richards,
Notary Public.

Kings Co. Clks. No. 63, Regs. No. 170.
N. Y. Co. Clks. No. 154, Regs. No. OR100.
Commission expires March 30, 1940.

EXHIBIT A

STATE OF NEW JERSEY

BOARD OF PUBLIC UTILITY COMMISSIONERS

In the Matter of the Application of The New Jersey Power & Light Company for Approval of the Exchange of Certain of its Investments for Other Securities

---

DECISION

Wall, Haight, Carey & Hartpense, by Edward J. O'Mara and William F. Morris, for the Petitioner

---

The petition of the New Jersey Power & Light Company seeks the Board's approval of the exchange of 53,850 shares of $6.00 Cumulative Preferred Stock of Metropolitan Edison Company, a Pennsylvania corporation, for 341,350

shares of Common Stock of Jersey Central Power & Light Company, a New Jersey corporation.

Upon the hearing of the application it appeared (1) that the market value of the $6.00 Cumulative Preferred Stock of Metropolitan Edison Company was of an estimated value of $4,312,308.00 and (2) that there is no current market price quoted on the Common Stock of the Jersey Central Power & Light Company and (3) that 712,411 shares of the Common Stock of Jersey Central Power & Light Company are pledged to secure $20,000,000.00 principal amount of debentures of National Public Service Corporation, which debentures have a current market value of 45 per cent of par or an aggregate market value of $9,000,000.00 which is equivalent to $12.63 per share for the Common Stock of the Jersey Central Power & Light Company pledged as collateral for said debentures, and that, based on that value, 341,350 shares of Common Stock of Jersey Central Power & Light Company would have a value of $4,312,308.00.

And it further appeared that the said $20,000,000.00 principal amount of the National Public Service Corporation debentures are the subject of litigation presently pending before the Courts in the State of New York.

And it now appearing that, in view of the absence of definite proof of the value of the shares of the Common Stock of the Jersey Central Power & Light Company, it would not be in the public interest to approve the proposed exchange of securities unless adequate security is pledged by escrow to insure to the New Jersey Power & Light Company the equivalent of the full value of the said $6.00 Cumulative Preferred Stock of the Metropolitan Edison Company, in the event that the sale of the Common Stock of the Jersey Central Power & Light Company pledged as collateral for the debentures of National Public Ser-

vice Corporation as aforesaid does not result in a price of $12.63 per share for said Common Stock. In such event recourse should then be had to additional securities as aforesaid in an amount sufficient to equal $4,312,308.00.

The Board hereby approves the exchange of 53,850 shares of $6.00 Cumulative Preferred Stock of Metropolitan Edison Company for 341,350 shares of the Common Stock of Jersey Central Power & Light Company and approves the transfer to the petitioner of said common stock on the books of the Jersey Central Power & Light Company upon the following conditions:

1. That the applicant will pledge in escrow with any bank or trust company of the State of New Jersey authorized to act as an escrow agent or representative under an escrow agreement to be approved by the Board, $1,000,000.00 principal amount of the Mohawk Valley Company 6% Consolidated Refunding Gold Bonds due November 1, 1981 and $1,000,000.00 principal amount of the Mohawk Valley Company 6% Consolidated Refunding Gold Bonds due November 1, 1991. In the event that the Common Stock of the Jersey Central Power & Light Company brings less than $12.63 per share at judicial sale, then the securities pledged under this provision shall be used to answer and satisfy the amount by which the value of 341,350 shares of common stock of Jersey Central Power & Light Company at said sale price is less than $4,312,308.00.

2. That this approval does not extend to the value of the property or to the accounts of any of the companies involved in this transaction, and further

3. That any entries made on the books of the applicant company shall be identified so as to permit of ready analysis.

4. That said exchange is approved without prejudice to the authority of the Board of the State with respect to rates, valuations, services or any other matter whatsoever in any future proceedings.

5. That the applicant company shall file with the Board within ten days from the date hereof an escrow agreement in accordance with condition (1) above, which shall be satsisfactory to the Board.

6. That the applicant company shall file with the Board within ten days from the date hereof its unqualified acceptance of the conditions herein stated; otherwise the approval herein granted shall be null and void.

Dated, March 11, 1938.

Board of Public Utility Commissioners,
By (signed) Thomas L. Hanson,
(Seal) *Commissioner.*

(signed) Frank J. Reardon,
Commissioner.

Attest:
(signed) Emmett T. Drew,
Secretary.

UNITED STATES OF AMERICA
FEDERAL POWER COMMISSION

Commissioners:

Clyde L. Seavey, Acting Chairman; Basil Manly, John W. Scott. Claude L. Draper not participating.

July 5, 1938.

Docket No. IT 5518

In the Matter of: New Jersey Power & Light Company and Jersey Central Power & Light Company

III.

ORDER INSTITUTING INVESTIGATION AND SETTING DATE OF HEARING

(Entered July 5, 1938)

It appearing to the Commission that:

(1) By order to show cause in the above matter adopted June 7, 1938, New Jersey Power & Light Company (hereinafter referred to as respondent) was required to submit on or before June 24, 1938, detailed information concerning its reported acquisition of 341,350 shares of common stock of Jersey Central Power & Light Company in apparent violation of Section 203(a) of the Federal Power Act, and show cause why the Commission should not proceed to enforce the requirements of said Act;

(2) On June 24, 1938, the respondent filed a return to said order to show cause wherein it avers that:

(a) On March 14, 1938, respondent, after obtaining the approval of the Board of Public Utility Commissioners of the State of New Jersey, by decision dated March 11, 1938, acquired 341,350 shares of the common stock of Jersey Central Power & Light Company, and that all of the conditions contained in said decision had been complied with;

(b) Jersey Central Power & Light Company is not a public utility as defined by the Federal Power Act;

(c) No approval of the Federal Power Commission was required by law to the acquisition by respondent of said shares of stock of Jersey Central Power & Light Company, and that respondent has not violated Section 203(a) or any other provision of the Act in connection with the acquisition of such stock;

The Commission, having considered the matters set forth in the order to show cause and the return thereto, upon its own motion, *orders* that:

(1) An investigation be and is hereby instituted to determine all facts, conditions, practices or matters relating to the transaction whereby the respondent on March 14, 1938, acquired 341,350 shares of common stock of Jersey Central Power & Light Company;

(2) A public hearing on said matter be held on August 29, 1938, at 10 A. M. in the hearing room of the Commission, Hurley-Wright Building, 1800 Pennsylvania Avenue, N. W., Washington, D. C., to ascertain:

(a) Whether or not the transaction described in (1) hereinabove involved the purchase, acquisition,

or taking by a public utility of any security of any other public utility within the meaning of Section 203(a) of the Federal Power Act;

(b) All facts pertaining to any other issue raised by the order to show cause and the return thereto.

By the Commission,
LEON M. FUQUAY,
Secretary.

UNITED STATES OF AMERICA
FEDERAL POWER COMMISSION

Commissioners:

Clyde L. Seavey, Acting Chairman; Claude L. Draper, Basil Manly. John W. Scott not participating.

July 29, 1938.

Docket No. IT-5518

In the Matter of: New Jersey Power & Light Company and Jersey Central Power & Light Company

IV.

ORDER POSTPONING HEARING
(Entered July 29, 1938)

It appearing to the Commission that:

Counsel for Jersey Central Power & Light Company has requested a two weeks' postponement of the public hearing in this cause now assigned to be held on August 29, 1938, in accordance with the order of the Commission adopted on July 5, 1938;

The Commission *orders* that:

For good cause shown, the public hearing in the above cause now set for August 29, 1938, be and the same is hereby postponed to September 13, 1938, at the same time and place.

By the Commission,
LEON M. FUQUAY,
Secretary.

UNITED STATES OF AMERICA
FEDERAL POWER COMMISSION

Commissioners:

Clyde L. Seavey, Acting Chairman; Claude L. Draper, Basil Manly, John W. Scott.

September 8, 1938.

Docket No. IT-5518

In the Matter of: New Jersey Power & Light Company and Jersey Central Power & Light Company

V.

ORDER POSTPONING HEARING
(Entered Sept. 8, 1938)

It appearing to the Commission that:

By order of the Commission, adopted July 29, 1938, a public hearing in the above cause was set for September 13, 1938;

The Commission on its own motion *orders* that:

The public hearing in the above cause now set for September 13, 1938, be and the same is hereby postponed to September 27, 1938, at the same time and place.

By the Commission,
J. H. Gutride,
Acting Secretary.

VI.

DESIGNATION OF EXAMINER

(Filed Sept. 8, 1938)

Hearing date: Sept. 27, 1938

The Commission, by order adopted July 5, 1938, having directed that a hearing be held in the above matter, Carroll B. Spencer is hereby designated as Examiner to preside at said hearing, pursuant to the order of the Commission adopted January 28, 1936.

(Sig.) C. L. SEAVEY
Acting Chairman

Dated: Sept. 8, 1938.

VII.

PETITION TO INTERVENE
(Filed Sept. 27, 1938)

To the Federal Power Commission:

The petition of Jersey Central Power & Light Company (hereinafter called "petitioner") respectfully represents that:

1. Petitioner is a corporation of the State of New Jersey, having its principal office at 501 Grand Avenue, Asbury Park, N. J., and is engaged in the business of generating, transmitting and distributing electric energy for sale wholly within the said State.

2. On June 7, 1938 the Federal Power Commission (hereinafter called the "Commission") issued its Order to Show Cause in the proceeding above captioned, requiring New Jersey Power & Light Company, respondent, to submit detailed information concerning its acquisition of 341,350 shares of the common capital stock of petitioner, in apparent violation of Section 203(a) of the Federal Power Act. Said order recites, *inter alia*, that it appears to the Commission that petitioner is a public utility subject to the Commission's jurisdiction.

3. On July 5, 1938 the Commission issued its Order Instituting Investigation and Setting Date of Hearing, wherein a public hearing was ordered to ascertain, *inter alia*:

"Whether or not the transaction described in (1) hereinabove* involved the purchase, acquisition, or taking by

*(That is, the acquisition by respondent of 341,350 shares of the common capital stock of petitioner.)

a public utility of any security of any other public utility within the meaning of Section 203(a) of the Federal Power Act."

The primary, and declared, end and purpose of such investigation is to determine whether or not petitioner and another are public utilities, within the meaning of that term as used in Section 203(a) of the Federal Power Act. The primary, and declared, issue on which hearings are to be had is precisely the same.

4. Petitioner is one of the parties primarily interested in and concerned with the aforesaid issue, and the proposed finding and determiaation, since such issue, finding and determination concern the status of petitioner and petitioner's rights, duties, powers and liabilities in connection with the Federal Power Act. Petitioner is advised and verily believes that an adjudication thereon may constitute an adjudication as to the general jurisdiction of the Commission over petitioner and may be applicable in other and different proceedings than the instant proceedings, by reason whereof its participation in this proceeding will be in the public interest.

5. Petitioner is advised, and verily believes, that it has a legal right to appear herein and be heard on the issue of whether or not it is a public utility subject to the Commission's jurisdiction.

6. Under the applicable definitions and limitations prescribed by the Federal Power Act, the instant proceeding involves an examination into the facts concerning the physical properties owned and operated by petitioner, and into the nature of the business done by petitioner. On these subjects, petitioner desires to establish the correct facts through its own witnesses who are best acquainted therewith, and through the advice of its counsel representing petitioner at the hearing.

7. The facilities owned and operated by petitioner are located entirely within the State of New Jersey, and do not extend to or touch the borderline of said State. Said facilities consist of generating, transmitting and distributing facilities for the supply of electrical energy to consumers within petitioner's franchise areas, which said areas are located entirely within said State. Said facilities were constructed, and are now owned and operated for the purpose of supplying consumers in such areas, and not for the purpose of supplying consumers in any other State or place. The business done by petitioner over such facilities is and has been the supply of electrical energy to consumers located in the State of New Jersey, and petitioner is not engaged in the business of supplying electrical energy to consumers or for consumption in any other State or place.

8. The facilities owned and operated by petitioner interconnect with facilities owned and operated by other public utility companies at or near South Amboy, N. J., Wrightstown, N. J. and Boonton, N. J. At the first two points the transactions are with Public Service Electric & Gas Company, a New Jersey corporation, with which petitioner is in no way affiliated, the transactions at the first point being the interchange of electric energy and at the second point the purchase by petitioner of electric energy. At the third said point an interconnection is made with New Jersey Power & Light Company, respondent herein, for emergency service. On information and belief, none of such electrical energy is transmitted in interstate commerce, nor is the same sold at wholesale in interstate commerce. The facilities owned and operated by petitioner which so interconnect with the facilities of others are exclusively facilities for transmission of electrical energy in intrastate commerce. The transactions had with such other companies are subject to regulation by the State of New

Jersey, and are in fact regulated by the Board of Public Utility Commissioners of said State.

Wherefore, petitioner respectfully prays:

(a) That leave be granted to petitioner to become an intervener in this cause, and a party thereto.

(b) That after hearings hereon, the Commission make and enter a finding, determination and order that petitioner is not a public utility subject to the jurisdiction of the Federal Power Commission, under the terms of the Federal Power Act or otherwise.

JERSEY CENTRAL POWER & LIGHT COMPANY
By: T. R. CRUMLEY,
President

State of New Jersey,
County of *ss:*

T. R. Crumley, being duly sworn, deposes and says that he is the President of Jersey Central Power and Light Company, the petitioner herein, that he has read the foregoing petition and knows the contents thereof, and that the same are true to the best of his knowledge and belief.

T. R. CRUMLEY

Subscribed and sworn to before me this 14th day of September, 1938.

J. Burney,
Notary Public of New Jersey

My commission expires Aug. 1st, 1942.
(Seal)

ORDER OF EXAMINER

Upon motion of counsel for the Jersey Central Power & Light Company made immediately after appearances of counsel were entered at the hearing, leave was granted said Jersey Central Power & Light Company to file its Petition to Intervene and the same was filed on the 27th day of September 1938, and the Jersey Central Power & Light Company, upon its motion, was made a party to this proceeding, as appears in the official transcript of the record, of the proceedings at the hearing.

This Sept. 27, 1938.

CARROLL B. SPENCER
Attorney Examiner.

VIII.

TRANSCRIPT OF HEARINGS

Washington, D. C.,
Tuesday, September 27, 1938.

The above-entitled matter came on for hearing, pursuant to notice, in Room 1201, Hurley-Wright Building, 1800 Pennsylvaania Avenue, N. W., Washington, D. C., at 10:00 o'clock a. m.

Before:
Carroll B. Spencer, Trial Examiner.

Appearances:

Lambert McAllister, Esq., on behalf of the Federal Power Commission.

C. E. Paxson and Robert N. Weston, of Travis, Brownback and Paxon, 61 Broadway, New York City, on behalf of New Jersey Power & Light Company.

Joseph F. Autenrieth, of Autenrieth & Wortendyke, 1180 Raymond Boulevard, Newark, New Jersey, on behalf of Jersey Central Power & Light Company.

PROCEEDINGS

EXAMINER SPENCER: The hearing will be convened.

On June 7, 1938, the Commission issued an order under which the New Jersey Power & Light Company was directed to submit in writing detailed information concerning

its reported acquisition of 341,350 shares of common stock of Jersey Central Power & Light Company, in apparent violation of Section 203(a) of the Federal Power Act, and on or before June 24, 1938, to show cause, if any, why this Commission should not proceed to enforce the requirements of said Act.

On July 5, 1938, the Commission adopted an order directing that an investigation be instituted to determine all facts, conditions, practices, or other matters relating to the transaction whereby the New Jersey Power & Light Company acquired 341,350 shares of the common stock of Jersey Central Power & Light Company; and by said order directed that a public hearing be held on August 29, 1938, at 10:00 a. m. in the hearing room of the Commission, to ascertain whether or not the acquisition of the said stock involved "the purchase, acquisition, or taking by a public utility of any security of any other public utility within the meaning of Section 203(a) of the Federal Power Act," and also to ascertain all facts pertaining to any other issue raised by the order to show cause and the return thereto. The return to the order to show cause was filed on the 24th day of June, 1938.

On July 29, 1938, the Commission adopted an order postponing to September 13, 1938, the hearing directed to be held under the order of July 5, 1938, and on September 8, 1938, by order, the said hearing was further postponed to September 27, 1938.

The aforementioned several orders are as follows:

June 7, 1938.

Docket No. IT-5518

In the Matter of:
New Jersey Power & Light Company and Jersey Central Power & Light Company

ORDER TO SHOW CAUSE

It appearing to the Commission that:

(a) New Jersey Power & Light Company and Jersey Central Power & Light Company are public utilities subject to the jurisdiction of the Federal Power Commission;

(b) The New Jersey Power & Light Company, on March 11, 1938, allegedly acquired 341,350 shares of the common stock of Jersey Central Power & Light Company without first having secured the approval of the Commission as required by Section 203 (a) of the Federal Power Act.

(c) The Federal Power Act, in Section 203(a), provides that no public utility shall purchase, acquire, or take any security of any other public utility without first having secured an order of the Federal Power Commission authorizing it to do so;

The Commission orders that:

The New Jersey Power and Light Company submit in writing under oath on or before June 24, 1938, detailed information concerning its reported acquisition of said 341,350 shares of common stock of Jersey Central Power & Light Company in apparent viola-

tion of Section 203(a) of the Federal Power Act and, on or before said above date, show cause, if any, why this Commission should not proceed to enforce the requirements of said Act.

By the Commission.

July 5, 1938.

Docket No. IT-5518

In the Matter of:
New Jersey Power & Light Company and Jersey Central Power & Light Company

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ORDER INSTITUTING INVESTIGATION AND SETTING DATE OF HEARING

It appearing to the Commission that:

(1) By order to show cause in the above matter adopted June 7, 1938, New Jersey Power & Light Company (hereinafter referred to as respondent) was required to submit on or before June 24, 1938, detailed information concerning its reported acquisition of 341,350 shares of common stock of Jersey Central Power & Light Company in apparent violation of Section 203(a) of the Federal Power Act, and show cause why the Commission should not proceed to enforce the requirements of said Act;

(2) On June 24, 1938, the respondent filed a return to said order to show cause wherein it avers that:

(a) On March 14, 1938, respondent, after obtaining the approval of the Board of Public Utility Com

missioners of the State of New Jersey, by decision dated March 11, 1938, acquired 341,350 shares of the common stock of Jersey Central Power & Light Company, and that all of the conditions contained in said decision had been complied with;

(b) Jersey Central Power & Light Company is not a public utility as defined by the Federal Power Act;

(c) No approval of the Federal Power Commission was required by law to the acquisition by respondent of said shares of stock of Jersey Central Power & Light Company, and that respondent has not violated Section 203(a) or any other provision of the Act in connection with the acquisition of such stock;

The Commission, having considered the matters set forth in the order to show cause and the return thereto, upon its own motion, orders that:

(1) An investigation be and is hereby instituted to determine all facts, conditions, practices or matters relating to the transaction whereby the respondent on March 14, 1938, acquired 341,350 shares of common stock of Jersey Central Power & Light Company;

(2) A public hearing on said matter be held on August 29, 1938, at 10 a. m. in the hearing room of the Commission, Hurley-Wright Building, 1800 Pennsylvania Avenue, N. W., Washington, D. C., to ascertain:

(a) Whether or not the transaction described in (1) hereinabove involved the purchase, acquisition, or taking by a public utility of any security of any other public utility within the meaning of Section 203 (a) of the Federal Power Act;

(b) All facts pertaining to any other issue raised

by the order to show cause and the return thereto.

By the Commission.

July 29, 1938

Docket No. IT-5518

In the matter of:
New Jersey Power & Light Company and Jersey Central Power & Light Company

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ORDER POSTPONING HEARING

It appearing to the Commission that:

Counsel for Jersey Central Power & Light Company has requested a two weeks' postponement of the public hearing in this cause now assigned to be held on August 29, 1938, in accordance with the order of the Commission adopted on July 5, 1938;

The Commission orders that:

For good cause shown, the public hearing in the above cause now set for August 29, 1938, be and the same is hereby postponed to September 13, 1938, at the same time and place. By the Commission.

September 8, 1938

Docket IT-5518

In the Matter of:
New Jersey Power & Light Company and Jersey Central Power & Light Company.

ORDER POSTPONING HEARING

It appearing to the Commission that:

By order of the Commission, adopted July 29, 1938, a public hearing in the above cause was set for September 13, 1938;

The Commission on its own motion orders that:

The public hearing in the above cause now set for September 13, 1938, be and the same is hereby postponed to September 27, 1938, at the same time and place. By the Commission.

On September 8, 1938, the Commission adopted an order designating Carroll B. Spencer to preside at the hearing, which order is as follows:

Docket IT-5518

In the Matter of:
New Jersey Power & Light Company and Jersey Central Power & Light Company

DESIGNATION OF EXAMINER

Hearing Date: Sept. 27, 1938

The Commission, by order adopted July 5, 1938, having directed that a hearing be held in the above matter, CARROLL B. SPENCER is hereby designated as examiner to preside at said hearing, pursuant to the order of the Commission adopted January 28, 1936.

(s) C. L. S.
Acting Chairman.

Dated: Sept. 8, 1938.

Will counsel for the Commission please enter his appearance?

MR. McALLISTER: Lambert McAllister, appearing for the Federal Power Commission.

EXAMINER SPENCER: Will counsel for respondent enter his appearance?

MR. PAXSON: C. E. Paxson and Robert N. Westoy. Mr. Joseph F. Autenrieth appears for the Jersey Central Power & Light Company, and particularly with a petition to intervene.

MR. AUTENRIETH: I might say to your Honor there is some ambiguity. If you rule we are parties I will not present the petition. If you rule we are not parties I will present the petition at the proper time.

EXAMINER SPENCER: You haven't filed a petition?

MR. AUTENRIETH: We haven't filed the petition. If you declare we are a party there is no necessity to file a petition to intervene. The only doubt about it, I am —

EXAMINER SPENCER (interposing): Has counsel for the Commission investigated the matter as to notice, service and so forth, so far as this party is concerned?

MR. McALLISTER: So far as notice and service is concerned I have not investigated, but counsel for the Jersey Central Power & Light Company can tell us whether they have been served with notice.

MR. AUTENRIETH: Yes, we have been served. It is merely a matter whether the order is clear. We desire to be parties and that is the purpose of this petition.

EXAMINER SPENCER: Is there any objection on the part of counsel for the Commission?

MR. McALLISTER: I have no objection to the petition being filed so long as there is any doubt in the mind of

counsel for the Jersey Central Power & Light Company.

EXAMINER SPENCER: Will you read the petition, please, sir?

MR. AUTENRIETH: This may be off the record.

(Discussion off the record.)

MR. PAXSON: If your Honor please, could we get a clarifying statement from counsel for the Commission as to their view whether Jersey Central Power & Light Company are parties? He says he has no objection to having the petition filed. Are we going to wait for action on the petition? We ought to have this thing clarified before we proceed further.

EXAMINER SPENCER: That will be determined before we proceed. I won't question whether or not they were served. Five or six other people, who were not parties, were served, like the Public Service Commission of New Jersey.

MR. AUTENRIETH: I just suggest counsel may stipulate we are a party and then we can abandon this application instead of taking the time to wade through it.

EXAMINER SPENCER: I take it your petition raises no new issue?

MR. AUTENRIETH: Just the question of interstate commerce, and we want to be heard on that question.

MR. McALLISTER: Under the rules of the Commission, Mr. Examiner, petitions for the right to intervene should have been filed prior to the hearing. I don't have a copy of those rules with me, do you?

EXAMINER SPENCER: Yes. They may be filed prior to or at the time of the hearing.

MR. McALLISTER: At the time of the hearing?

MR. AUTENRIETH: Yes.

EXAMINER SPENCER: I think they are in apt time.

MR. McALLISTER: That is right, they seem to be, but what I wanted to say was I have no objection to the filing of this petition. The parties it seems inject a point which may be common with that which is under consideration and will be determined in the original proceedings instituted by the Commission, but if the petition is to be filed, if that is the desire of the Jersey Central Power & Light Company, I think the case should take its regular course and the petition should be filed, if they want to secure the right to intervene and be heard as a party to these proceedings. I am not advising them one way or the other.

EXAMINER SPENCER: You have no objection?

MR. McALLISTER: No, but for me to say what the Commission intended in the order which was issued or to stipulate on the record, why, I cannot bind the Commission.

EXAMINER SPENCER: No.

MR. McALLISTER: And if they were to say afterwards, if Jersey Central Power & Light Company was to say afterwards they were misled by the stipulation, I would be placed in an anomalous position, so I think, for the protection of all parties concerned, that counsel should pursue that course which will assure him of the protection of the rights he asserts, that is, a right to be heard as a party in this proceeding.

EXAMINER SPENCER: I will entertain the motion.

MR. AUTENRIETH: May I present the petition and make a motion to that effect?

EXAMINER SPENCER: Let the record show that upon motion of Mr. Autenreith, counsel for the Jersey Central

Power & Light Company, the Jersey Central Power & Light Company was permitted to file this petition of intervention and to become a party to this proceeding.

Does counsel for New Jersey Power & Light Company wish to make an opening statement?

MR. MCTENRIETH: May I interrupt, do I understand my petition has been acted upon and we are now a party?

EXAMINER SPENCER: Yes.

MR. PAXSON: If the Examiner please, I do not at this time have any opening statement to make. I must say, representing the New Jersey Power & Light Company, that I don't know exactly why I am here. I have read these orders that the Commission has issued, and they have called a public hearing to determine whether or not New Jersey Power & Light Company has violated Section 203 (a) of the Federal Power Act in acquiring 341,350 shares of the common capital stock of Jersey Central Power & Light Company. As I remember an order to show cause was issued and our sworn answer was filed denying we had violated in any way either Section 203 (a) or any other section of the Act, and I take it, at this time the burden of the proof is on the Federal Power Commission, if it cares to proceed. So I suggest that any statements be made first by the Federal Power Commission and I may have some rejoinder thereto.

EXAMINER SPENCER: Does Counsel for the Commission have anything to say?

MR. McALEISTER: I have nothing to say at this time, Mr. Examiner. I call upon Mr. Grimsley.

EXAMINER SPENCER: Before we proceed with the introduction of evidence, will counsel for the New Jersey Power & Light Company and the Jersey Central Power & Light Company admit that 341,350 shares of the common

stock of Jersey Central Power & Light Company has been acquired by New Jersey Power & Light Company?

MR. PAXSON: If your Honor please, that has been admitted in the answer and sworn to and we are perfectly willing to admit it.

EXAMINER SPENCER: The Commission could prove it that way. I was thinking though it could be stipulated.

MR. PAXSON: Representing the New Jersey Power & Light Company we so stipulate that stock has been acquired by New Jersey Power & Light Company on March 14th.

MR. AUTENRIETH: The Jersey Central Power & Light Company stipulates that.

EXAMINER SPENCER: Proceed.

Whereupon

A. H. GRIMSLEY,

a witness produced by and on behalf of the Federal Power Commission, having been first duly sworn by the Examiner, was examined and testified as follows:

Direct Examination

BY MR. McALLISTER:

Q. Mr. Grimsley, will you state your full name. And relate your education and experience?

A. A. H. Grimsley. My education consisted of complete high school work, and in addition took another year as post graduate work, consisting largely of normal school work. Then, some special work equal to about two years of college work, and then I completed a one-year course of accountancy.

From 1894 to 1898 I was engaged in Civil Engineering Department of Railroad Construction Work with the West Virginia, Pittsburgh Railway Company, during which time

I carried on my technical studies and was promoted successively from chainman to rodman, then to levelman and then to transitman, and finally surveyor in charge of party.

In 1898 to 1901 I studied mechanical engineering while actively working upon problems of construction work of mills and car plants.

In 1901 to 1905 I was employed in the operating department of the Detroit, Toledo and Ironton Railway Company, doing some construction work, but most of my work during this period was spent in the operating department, in which department I was promoted to the office of superintendent of terminals.

In 1905 to 1907 I worked as mechanical engineer in the design and construction of a pig iron blast furnace. This work also included the development of a coal mine, rock quarry and iron ore operation.

From 1907 to 1915 I was superintendent and later manager of the Kanawha Water and Light Company, Charleston, West Virginia, in charge of street railway, artificial and natural gas system, and superintendent of water works and electrical department, during which time I constructed distribution systems in the departments of electricity, gas and water. During this period I took up the study of electrical engineering and completed a well-balanced course of study, and at the same time, by reason of my position, put this study into practical use.

From 1915 to 1925 I was connected with the Virginia Western Power Company, beginning as chief engineer and assistant to the president of that company.

I later became vice president and general manager. During the time I was connected with this company I designed and constructed many miles of high tension transmission lines, substations, hydro-electric plants and steam-electric plants.

The company was a rapidly growing utility operating in the states of Virginia and West Virginia. Part of my work consisted of the acquisition and consolidation of other utilities in the neighborhood.

In 1925 I sold my interest in that company, together with some options I had on other utility properties in the state of Virginia. I continued with the new owners as president and general manager, and merged these utilities into the Virginia Public Service Company and set up a complete operating organization.

In October, 1926, I then went to Aurora, Illinois, as vice president of General Engineering Management Company of New York, supervising the operation of the Western United Gas and Electric Company, until June, 1927, at which time I completed negotiations for the sale of this property to Middle Western Utilities.

During the time I was with the General Engineering Management Company of New York, I was also retained in an advisory capacity in reference to the purchase of utility properties.

MR. PAXSON (interposing): Speak a little louder, Mr. Grimsley, I can't hear very well.

THE WITNESS: The total consideration for the properties acquired was approximately $100,000,000. From 1927 until 1934 I was engaged in the handling of several personal matters and devoted my attention to the development, refinancing and re-organization of several industrial projects in the region of my home in Virginia.

In June, 1934, I was appointed senior engineer on the staff making the national power survey. This staff was a branch of the Federal Power Commission and later it was merged into the regular Commission organization, at which time I was classified as principal engineer.

BY MR. McALLISTER:

Q. Mr. Grimsley, have you had prepared under your direction a map showing the general location of the Jersey Central Power & Light Company and other utilities in the state of New Jersey?

A. I have.

MR. PAXSON: Will the reporter read that question? The noise and trolley cars prevent me from hearing well.

(The reporter thereupon read the preceding question and answer as recorded.)

BY MR. McALLISTER:

Q. I hand you a map and ask you if that is the map you prepared?

A. Prepared under my direction; yes, sir.

MR. McALLISTER: Mr. Examiner, I offer this map in evidence as Commission counsel's Exhibit No. 1, and ask that it be received in evidence.

EXAMINER SPENCER: Is there any objection?

MR. PAXSON: If the Commission please, we have never seen this map before. We have no objection to the testimony this is the map he prepared. I don't know what Mr. Grimsley's qualifications are for preparing a map. I don't know what is endeavored to be proved thereby. I presume it is correct. I don't know where it came from. It may be right and may not.

EXAMINER SPENCER: It may be received and marked Exhibit 1 with the reservation that counsel for the respondent may show any inaccuracies.

MR. PAXSON: That is perfectly satisfactory.

(The map referred to was marked Commission's Exhibit No. 1 and received in evidence.)

BY MR. McALLISTER:

Q. Mr. Grimsley, will you explain for the record the source of information which is recorded on the map which has been identified as Exhibit No. 1?

A. It is taken from the maps furnished by the various utilities, together with their annual reports to the Federal Power Commission.

Q. You said various utilities. Will you state specifically which utilities they were?

A. Jersey Central Power & Light Company, New Jersey Power & Light Company, Staten Island Edison Corporation, Philadelphia Electric Company, and subsidiaries, Public Service Electric and Gas Company and some of the main transmission lines of Pennsylvania Power & Light Company.

Q. Mr. Grimsley, have you made a study of the operating conditions and circumstances under which the Jersey Central Power & Light Company generates electric energy and serves the area indicated on Exhibit No. 1?

A. I have.

Q. Will you state for the record the studies that you have made and what is shown to be the conditions of operation on that System?

A. The Jersey Central Power & Light Company operates an interconnected system of electric facilities in northern and eastern New Jersey. It also operates an extensive gas system, but no further efforts will be made to this utility—

MR. PAXSON: (Interposing) Pardon me, are you testifying or reading, Mr. Grimsley?

I think, Mr. Grimsley, if you are going to qualify as an expert you should testify.

MR. McALLISTER: It is the result of a study, Mr. Examiner. It is entirely in conformity with the usual practice in stating the matters developed in the course of study before administrative hearings. The objection certainly can not be based upon any substantial ground, and it is to my mind wholly unusual and indicates at the outset of this hearing it is more obstructionist than a valid objection to the testimony that is being offered by the witness.

EXAMINER SPENCER: Read the question.

(The reporter thereupon read the pending question and the answer thereto as recorded.)

MR. PAXSON: If the Commission please, I don't object to any questions, but he is now starting to read from an apparent document.

EXAMINER SPENCER: Something about the history?

MR. PAXSON: May I make a few more remarks?

EXAMINER SPENCER: Yes.

MR. PAXSON: Counsel for the Commission states that my objection seems to him to be purely obstructionist and it is quite unusual in these proceedings. In answer thereto, I may say I think this proceeding is quite unusual. The Examiner asked me if I had any statement to make and I stated I did not know why I was here. These proceedings are initiated really to show cause why the New Jersey Power & Light Company should not be compelled to comply with the law. I don't know whether this proceeding is the institution of something of a criminal character, whether there is any attempt to impose any pain and penalty on my client for infraction of law, or whether

this is a pure investigation to ascertain some fact which the New Jersey Power & Light Company does not control in any way, and if the testimony to be offered in a proceeding based upon technical engineering studies, Mr. Grimsley has told us a great deal about his experience, and I know him and I have the highest respect for him, but I asked counsel to make some opening statement. I would like to know what the purpose is. Is it to initiate something against our company, and if so, what is it?

I think I am entitled to ask that the ordinary rules of practice imposed in a court of law should be followed here.

I don't know what it is. Is he going to read something which is hearsay? He made a map. I don't care ordinarily, in the ordinary simple hearing on an application, but if this is an adverse proceeding in character, I would like to know it. If it is just an investigation with no pain and penalty attached, I would like to know that. I certainly am going to insist that the ordinary rules of evidence be complied with.

EXAMINER SPENCER: As a matter of law, it is the Examiner's opinion the Commission has no authority to impose pain and penalties, and on your objection to the question I shall rule as to whether the witness can read or whether he will have to state from memory such facts as he can now state.

Mr. Reporter, please read the question.

(The reporter thereupon read the question referred to as recorded.)

EXAMINER SPENCER: Mr. Grimsley, are the papers from which you are reading, do they refer to the studies which you have made? Is that what you were reciting?

THE WITNESS: Absolutely.

EXAMINER SPENCER: Then you are not reading from the paper a statement of any fact in connection with the exhibit?

THE WITNESS: Well, the study will refer at times to these various systems and facilities shown on the map. It is necessary to study these properties in order to determine the various movements of energy.

EXAMINER SPENCER: The Examiner rules the witness may refer to the paper for the purpose of refreshing his memory in response to the question. If counsel for the Commission wishes a statement to be introduced in the record, I think the proper way to do would be to introduce it in the form of an exhibit.

MR. McALLISTER: In other words, Mr. Examiner, the witness is not to be permitted to read the various parts of his prepared studies in response to questions?

EXAMINER SPENCER: He can read from the paper such parts as is necessary for him to refresh his memory in connection with his testimony based on the studies he has made.

BY MR. McALLISTER:

Q. Will you proceed?

MR. PAXSON: If Mr. Grimsley has made a study, I presumed he was going to qualify as an expert. If he is going to read something somebody else may have prepared, I object. I want to find out what Mr. Grimsley did.

MR. McALLISTER: You will have opportunity to inquire of Mr. Grimsley what he knows about it.

BY MR. McALLISTER:

Q. Proceed with your description showing the results of your studies, Mr. Grimsley.

A. In northern New Jersey the territory served includes part of Passaic, Morris and Somerset Counties, and is adjacent to and between the properties of the New Jersey Power & Light Company and the Public Service Electric and Gas Company.

Q. Mr. Grimsley, at that point, will you indicate on the map, which is Exhibit No. 1, just the matters to which you have referred?

A. That section of the—that partial area, the Jersey Central Power & Light Company serves as previously outlined, is shown in sort of an orange color and designated on the side under the legend for the various colors used in setting forth the territories served by the various utilities in order to give a clear picture of the operating territories.

Q. The part to which you refer as being located in Passaic, Morris and Somerset Counties is that part that is immediately adjacent to the part shown in green representing the areas served by New Jersey Power & Light Company, is that true?

A. That is correct, and that of the pale yellow on the east served by the Public Service Electric and Gas Company.

BY EXAMINER SPENCER:

Q. Is that indicated by the letters B and D?

A. It is indicated by the letter D.

BY MR. McALLISTER:

Q. The letter D indicates what company?

A. New Jersey Power & Light Company.

Q. Now will you describe the location of the other part of the system of the Jersey Central Power & Light Company?

A. In eastern New Jersey the field of operation of

Jersey Central Power & Light Company extends across a wide area along the Atlantic Seacoast from South Amboy, south through Middlesex, Monmouth, Ocean, and the northern tip of Burlington Counties.

In this territory, Jersey Central served in 1937 a total of 101,144 residential, industrial and commercial customers.

Q. Mr. Grimsley, what generating plants are owned by Jersey Central Power and Light Company?

A. Jersey Central Power and Light Company owns six generating plants with a total capacity of 137,650 kilowatts.

With the exception of Pompton Lakes hydro plant, all plants are operated by steam. The Raritan River and Camden plants of 60 and 50 thousand kilowatts capacity respectively, are the main sources of energy for this company.

In 1937 the total energy produced by this company amounted to 365,826,350 kilowatt hours.

The maximum demand on steam generating plants in 1937 was 70,200 kilowatts, their capability at the time of peak was 121,650 kilowatts and installed capacity connected to load was 105,000 kilowatts. It follows, therefore, that the capacity of the company's plants is well in excess of its maximum annual power requirements.

Q. What is the source of the information, Mr. Grimsley, which you have just referred to?

A. This information is taken from the reports made by the company to the Federal Power Commission, on form F. P. C. No. 1 and Power System Statement Form 61.

Q. That information is supplied by the company under oath, is it not, Mr. Grimsley?

A. They are attested to.

Q. From those reports to which you have just referred, that information supplied by the company under

oath, have you prepared an exhibit setting forth the information as to the generating capacity of the plants of this company, its energy output and plant facilities and other pertinent information showing the operations of this system as they are reported to the Federal Power Commission?

A. I have.

Q. I show you a statement, Mr. Grimsley, which is headed Jersey Central Power & Light Company, physical and operating characteristics, and ask you if that is the exhibit which you prepared and to which you have just referred?

A. That is correct.

MR. McALLISTER: Mr. Examiner, I offer in evidence at this time the document identified by the witness as Commission counsel's Exhibit No. 2.

MR. PAXSON: Let's see it.

BY MR. McALLISTER:

Q. Mr. Grimsley, by reference

MR. PAXSON: (interposing) Just a moment May we have a second to look this over?

EXAMINER SPENCER: You may.

MR. PAXSON: It is quite a complicated study for a poor lawyer like me to accept at once. I am not an engineer.

If the Commission please, I have no objection to the inclusion of this, subject to my right in later checking it, and to introduce evidence to dispute it. I also want to enter an objection to one of the labels on this proposed exhibit, namely, the label "Energy sold for resale." It looks to me as though that carries with it some legal conclusion gleaned from the use of cer-

tain language in the Federal Power Act. I don't know what he means by the statements, but if it is meant thereby to imply that means resale in interstate commerce, I object to it as a legal conclusion. This language is apparently copied from the Federal Power Act.

EXAMINER SPENCER: I understand this is compiled from the reports of the company made to this Commission.

THE WITNESS: That is correct, purely statistical. Sold for resale means any amount sold to other utilities.

MR. PAXSON: You are not trying to stigmatize either interstate or intrastate commerce—

MR. McALLISTER: (interposing) I will ask the reporter to read the question.

Off the record.

(Discussion off the record.)

BY EXAMINER SPENCER:

Q. Mr. Grimsley, does this "Energy sold for resale" appear on the report filed by the company?

A. All of it.

EXAMINER SPENCER: Let the record show this is admitted as Commission's Exhibit No. 2, subject of course to the right of the respondent to show any inaccuracies. You may proceed.

(The document referred to was marked Commission's Exhibit No. 2 and received in evidence.)

BY MR. McALLISTER:

Q. Mr. Grimsley, will you outline for the record, will you state for the record the energy transactions depicted by the exhibit which you have prepared from sworn re

ports of the Jersey Central Power Company, which has just been received as Exhibit No. 2?

A. The total output of this company's plants in 1937 was about 366,000,000 kilowatt hours. Of this amount, Jersey Central sold to ultimate customers

EXAMINER SPENCER: (Interposing) Where does that figure appear?

BY MR. McALLISTER:

Q. Mr. Grimsley, will you state on the record by columns and so forth, so that it can be identified in the record?

A. I used the round figure 366,000,000. The exact figure under energy output by plants, shown in Group B of the Exhibit, the actual output for 1937 was 365,826,650 kilowatt hours.

Q. Will you proceed, Mr. Grimsley?

A. Of this amount, Jersey Central sold to ultimate consumers in round figures 248,000,000 kilowatt hours, to other utilities 61,000,000 kilowatt hours, and the remainder was used by the company or lost in transmission or distribution.

During the same year Jersey Central purchased from other utilities 1,634,450 kilowatt hours.

Jersey Central sold to Public Service Electric and Gas Company 55,421,000 kilowatt hours in 1937; 70,694,825 kilowatt hours in 1936; 77,333,196 kilowatt hours in 1935; and 56,345,000 kilowatt hours in 1934.

The deliveries to Public Service were all made to the Mechanic Street substation, located in Perth Amboy, and represents an important market for Jersey Central, which over a period of years remained at a substantially high level.

Other utility power sales made by Jersey Central were to New Jersey Power & Light and several small municipal systems.

MR. PAXSON: Will you read that last answer, Mr. Reporter?

(The reporter thereupon read the preceding answer as recorded).

MR. PAXSON: If the Commission please, on further study, I offer just in the interest of expedition, one objection to this report. I note that figures are compiled for 1934. I don't know that it is very important, but I just want to know how far back we go. This Federal Power Commission had no jurisdiction of any electric utility prior to August 26, 1935, and it would seem to me in order to save the work of all involved we ought not to be obliged to go back any further. It seems to me there ought to be some limit.

EXAMINER SPENCER: Your theory is what?

MR. PAXSON: My theory is that if the company was subject to the law at any time, it was not subject to it in 1934. I wonder if this is going back to the beginning of mankind?

MR. McALLISTER: When you go back to the year 1934 you can hardly say you are going back to the beginning of mankind. Nevertheless, I wish to state this, a constant condition of facts over a long period of years with little or no change is a matter of fact in which this Commission is vitally interested, even though it goes back before August 26, 1935.

MR. PAXSON: I do press my objection. I object to any figures prior to August 26, 1935, because at that time the Federal Power Commission had no jurisdiction of public utilities.

MR. McALLISTER: It is not predicated

MR. PAXSON: I do not know to what use these figures may be devoted.

EXAMINER SPENCER: The Examiner can understand that figures for 1934 may have some bearing upon the receipts in subsequent years, and with the statement that judicial notice will be taken of the fact that the Commission did not have jurisdiction in 1934, the exhibit will be admitted as prepared. You may proceed.

BY MR. McALLISTER:

Q. Mr. Grimsley, in the testimony which you have just been offering, you made reference to an interconnection between Jersey Central Power & Light Company and other utilities. Will you state what those connections are more specifically, and where they are made?

MR. PAXSON: Now, if the Commission please, I object to the form of the question. I do not wish to be captious. He says other public utilities and the term public utility has a legal significance. If you will say other public service or electrical utilities, then I have no objection.

EXAMINER SPENCER: I have not taken notice of the fact that this is a public utility. It is a question of fact as to whether it is a public utility within the meaning of the Federal Power Act and referring to it as a public utility will not within itself denominate it a public utility within the meaning of the Federal Power Act.

MR. PAXSON: I may fall into this same error myself.

BY MR. McALLISTER:

Q. Will you answer the question?

A. The electrical facilities of Jersey Central are interconnected with the facilities of Public Service Electric and Gas Company on the south bank of the Raritan River, making it possible for energy generated at South Amboy

to be delivered at 26,400 volts to the Mechanic Street sub station of the Public Service Electric and Gas Company in Perth Amboy, on the north side of the Raritan River.

The second important interconnection between these two systems is at Wrightstown and New Lisbon, New Jersey.

Over this interconnection the Jersey Central received from Public Service 800,000 to 1,300,000 kilowatt hours per year during the last four years. The energy delivered by Jersey Central to Mechanic Street substation was utilized by Public Service Electric and Gas Company in carrying its load at this substation, which includes deliveries to Staten Island Edison Corporation—

MR. PAXSON: Just a moment. I object to that type of testimony that contains lots of conclusions. He is trying to say how Public Service uses this power. That is a conclusion. That is a conclusion of fact and a conclusion of law. If he says they take so much power, why all right. As to how they use it, we have got to have further evidence. That begs the whole question.

EXAMINER SPENCER: Will counsel for the respondent—

MR. PAXSON: (Interposing) That is the trouble with reading a paper that may have some preconceived theory or idea.

EXAMINER SPENCER: That gives an opportunity, counsel, a wonderful opportunity on cross-examination.

MR. PAXSON: If you will give me a copy so I can remember all these things, why all right. I don't have a photographic memory.

EXAMINER SPENCER: What does the Commission counsel wish to say?

MR. McALLISTER: Mr. Examiner, the statement made by the witness is entirely consistent and appropriate and Mr. Paxson, if he will ask the reporter to read back the answer as far as it has gone, I am sure he will see the significance of it.

EXAMINER SPENCER: Read the answer.

(The reporter thereupon read the answer referred to as recorded.)

EXAMINER SPENCER: It doesn't seem he was—

MR. PAXSON: (interposing) Maybe I was in error. The trouble is in reading from a written memorandum—if you will go a little more slowly I will appreciate it and I suppose the recorder will too.

THE WITNESS: I will be delighted.

—In the state of New York and at times parts or all of the loads in their substations for the central division.

BY MR. McALLISTER:

Q. (interposing) Right there, you refer to the central division of what utility company?

A. That is Public Service Electric and Gas Company.

Q. All right.

A. Over the same interconnection, Mechanic Street Substation, Jersey Central received from Public Service 315,600 kilowatt hours in 1937.

Energy transactions at these transfer points between the two companies are carried out in accordance with contracts dated March 24, 1931 and July 19, 1935, and filed with the Federal Power Commission, and identified in the Commission's records as Public Service Electric and Gas Company rate schedules F. P. C. No. 7 and F. P. C. No. 8.

MR. McALLISTER: Mr. Examiner, those agreements filed as rate schedules with the Federal Power Commission are official documents and I ask that at this time these two rate schedules, Public Service Electric and Gas rate schedule F. P. C. No. 7 and Public Service Electric and Gas Company rate schedule F. P. C. No. 8 be made a part of the record in this case by reference.

EXAMINER SPENCER: Is there any objection?

MR. PAXSON: As I understand it, these are just the two contracts. I don't know anything about the F. P. C. numbers, but I have no objection to having these contracts included by reference.

EXAMINER SPENCER: Let the record show these records are included by reference as part of the record in this case.

BY MR. McALLISTER:

Q. Have you finished, Mr. Grimsley, with your statement as to the interconnections of the Jersey Central Power & Light Company?

A. The third important interconnection of Jersey Central with other electric utilities is that between its Boonton substation and the West Wharton substation of New Jersey Power & Light Company. The foregoing interconnections tie in intimately the electric facilities of the Jersey Central Power & Light Company with those of two large—

MR. PAXSON: (interposing) I object to the use of the word intimately and important. Can't he stick to the bare facts? I am not trying to be an obstructionist. Can't he just tell us the physical facts?

EXAMINER SPENCER: I think, Mr. Grimsley, you can state the facts, whether they are important or unimportant.

MR. PAXSON: They may not be intimate or important.

MR. McALLISTER: Mr. Examiner, I think it is rather inconvenient to testify when you are deprived of the use of words which express the very thoughts and purpose of the testimony. Now it would be entirely appropriate on cross-examination by opposing counsel or by the Examiner, if he cares to do so, to determine from the witness what he intends to convey by the use of certain words, and I don't think it should be stricken out merely because it may appear to be unusual.

EXAMINER SPENCER: The only thought the Examiner has is that the witness can testify to the connection and the amount of electricity passing through, which would determine the importance. I appreciate your statement, that it is necessary to use words to convey meaning, and all that. In so far as you can, without concluding it is important, you may state just the facts that lead you to conclude it is important. That will prolong this hearing, and if counsel for the respondent insists that should be done, I should think as a matter of legal right he is entitled to have the facts stated.

BY MR. McALLISTER:

Q. Will you state for the record what you intended to convey by the use of the word intimately in your last response?

A. I am stating here the results of the complete study of all of these facilities. Through interchange of energy they are dependent upon one another for generating capacity as spare breakdown, or what not. The study which I made was in addition to the records here. I have used those records and I have been on the ground and looked

over these facilities, and to me it is an important interconnection, just as I have stated. I think I would be inaccurate if I were to omit that word. I repeat from facts in the matter what I have found and believe to be facts.

MR. PAXSON: The facts are the switch is always open and is only used for emergencies and when I say the switch is open I mean no electricity can flow over it and when closed it flows. If he wants to tell us the facts he might state that.

THE WITNESS: I am going to do that.

MR. PAXSON: Or discuss about how important it is. I say those adjectives are not necessary. Let him testify to the facts. One or two or three of these words might slip by him if he keeps on in the use of it. If it is introduced

EXAMINER SPENCER: (interposing) Mr. Grimsley, you can testify to the same facts without saying it is important as you can by saying it by using more words which will indicate the importance. As to whether it is important or not is a question of fact, but the Examiner's present opinion is that any connection would be important for the purposes of this inquiry, and in so far as you can, please describe them without saying they are important. If you have to talk an hour to tell why you think they are important, please go ahead and take the time.

BY MR. McALLISTER:

Q. Mr. Grimsley, with reference to your answers regarding these interconnections between the Jersey Central Power & Light Company and other utilities adjacent to it, and the necessity for these connections and the operations that are possible by reason of these interconnections which you say indicate its necessity and importance, will you describe what those are?

MR. PAXSON: I object to the use of the word possible. The Federal Power Commission has jurisdiction over facilities, as I understand it, when actually used for the transmission of electrical energy in interstate commerce, but I don't think we ought to indulge in the realm of speculation, and I don't think the Commission should be interested in—

EXAMINER SPENCER: (interposing) I think that is the only way you could determine it.

MR. PAXSON: Such things might be possible and never happen as a matter of fact.

EXAMINER SPENCER: That is true. You may show that. You may answer.

MR. PAXSON: I take an exception.

THE WITNESS: I don't know what the question is now. It prevents me from putting in here the very things Mr. Paxson has referred to.

MR. PAXSON: Mr. Grimsley, I am not trying to hall you up, to use the common metaphor, all I have got to do is stick in this record, and I say that is the difficulty of reading a paper. You go ahead and I will try not to make any objections I don't think necessary in the interest of my client. I can't tell what you have in mind and may have later.

EXAMINER SPENCER: Answer the question, Mr. Grimsley.

MR. McALLISTER: Read the question, Mr. Reporter.

(The reporter thereupon read the pending question as recorded.)

THE WITNESS: Well, these connections make possible the transfer of energy in large quantities

from one utility to the other. These interconnections enable also Jersey Central to operate in addition to any synchronism with the whole group of interconnected utilities supplying electrical service in the state of New Jersey, which, for various economic and engineering and operating reasons interchange power among themselves and with other utilities in adjoining states.

BY MR. McALLISTER:

Q. What arrangement, Mr. Grimsley, covers the interchange of electrical energy between the Jersey Central Power & Light Company and the New Jersey Power & Light Company?

A. The interchange power between Jersey Central and New Jersey Power & Light is carried on in accordance with the contract dated June 16, 1937, which superseded a contract between these two utilities dated March 27, 1935. These two contracts were filed with the Commission and have been identified as New Jersey Power & Light rate schedule F. P. C. Nos. 4 and 5.

BY MR. PAXSON:

Q. Mr. Grimsley haven't you got the date wrong in that contract in 1937? I think the date is February 6, 1937.

A. Well, let's have them. That is the way to settle that.

MR. PAXSON: Off the record.

(Discussion off the record.)

THE WITNESS: The difference here arises because that was filed on June 16th.

MR. PAXSON: All right.

THE WITNESS: Now then, may I correct the record so far as the contract date is concerned, June 16, 1937, which superseded the one dated—

EXAMINER SPENCER: (interposing) We will take a recess for five minutes while you clear up the date.

(Whereupon a five-minute recess was had, at the conclusion of which the following occurred:)

EXAMINER SPENCER: The hearing will be reconvened. You may proceed, Mr. McAlister.

BY MR. McALLISTER:

Q. Mr. Grimsley, will you make the necessary correction to show the proper date for that new contract which was pointed out to be in error as you said originally?

A. The contract in effect is dated February 6, 1937, instead of June 16th, which was the filing date.

Q. The filing date with the Commission?

A. With the Commission.

Q. What has been the effect in operations brought about by this change in contract, Mr. Grimsley?

A. A comparison of the two contracts shows a substantial change in the relations between the two utilities during the last two years. By the provisions of the contract between these two companies—

MR. PAXSON: (interposing) Just a moment, doesn't the contract speak for itself, Mr. McAllister?

MR. McALLISTER: Yes.

MR. PAXSON: Do you need his legal conclusions in respect thereto, Mr. Examiner?

MR. McALLISTER: The contracts speak for themselves. He is merely pointing out the high lights which are necessary for the subsequent statements. It shows the basis for the subsequent testimony and indicates wherein it finds support in the agreement between the two companies. It is entirely appropriate.

It is not an attempt to identify it or to interpret the contracts, but is merely making reference to the provisions of the contract and a statement regarding that in connection, that is a statement of the operation under the contracts as they exist today.—

EXAMINER SPENCER: (interposing) Have those contracts been introduced?

MR. McALLISTER: They will be introduced. I will do it right now, Mr. Examiner.

Mr. Examiner, these contracts to which reference has just been made by the witness are regularly filed rate schedules with the Federal Power Commission and identified in its records as New Jersey Power & Light Company rate schedule F. P. C. 4 and New Jersey Power & Light Company rate schedule F. P. C. 5.

I ask that these two rate schedules be made a part of the record by reference.

MR. PAXSON: No objection.

EXAMINER SPENCER: Let the record show that the rate schedules 4 and 5 are made a part of the record in this case by reference.

BY MR. McALLISTER:

Q. Will you proceed?

A. By the provisions of the contract between these two companies made effective March 27, 1933, Jersey Central secured emergency capacity from New Jersey Power & Light Company to the extent of the capacity of the interconnection at Boonton, New Jersey, approximately 12,000 KVA, less that portion of the capacity which may be used at the time of the emergency for the supply of firm power.

For this emergency service Jersey Central agreed to pay a fixed charge of $1,000 per month, plus the actual cost of delivering energy, plus 25 per cent.

For emergency service delivered by Jersey Central to New Jersey Power & Light Company, the latter was to pay only the cost of delivering energy, plus 25 per cent.

Under the terms of this contract, Jersey Central paid in 1936 a total of $12,385 for 74,600 kilowatt hours of energy.

By the terms of the new contract Jersey Central agreed to sell and New Jersey Power & Light Company agreed to purchase firm power in the minimum amount of 3,000 kilowatts and 666,666 kilowatt hours per month, for which Jersey Central shall bill New Jersey Power & Light Company a demand charge of $2,760 per month, and an energy charge at economy flow prices as described in Section C of Article 4 of this contract.

It is also provided in this contract that the emergency services which Jersey Central are obtaining from New Jersey Power shall continue, but the minimum fixed charge of $1,000 per month to be paid by Jersey Central is eliminated.

While this contract became effective on February 6, 1937, the application of the minimum monthly charge for firm power supplied to New Jersey Power & Light Company was deferred until a new interconnection between the two systems is established.

The new contract indicates the Jersey Central is to become an important source of power for New Jersey Power & Light Company, which, as will be established later, is engaged in extensive interstate transactions in electrical energy.

In delivering energy—

MR. PAXSON: (interposing) I object to stating will establish. If he wants to establish, establish it.

THE WITNESS: Give me time. It is in proper sequence.

MR. PAXSON: Suppose he never does.

EXAMINER SPENCER: Strike that from the record that it "will be established later" and proceed.

MR. McALLISTER: That is entirely satisfactory later, Mr. Examiner.

EXAMINER SPENCER: If it is established it will be in the record.

MR. McALLISTER: The answer then will read it is engaged in extensive interstate transactions in electrical energy which is the statement of the witness, qualifying description eliminated, which is entirely satisfactory to me.

THE WITNESS: In delivering energy to Public Service Electric and Gas Company and New Jersey Power & Light Company, Jersey Central is drawn into extensive interstate commerce transactions which take place over the boundary lines of the state of New Jersey.

MR. AUTENRIETH: Objected to as a conclusion without any evidence to support it.

THE WITNESS: I will give you the evidence.

BY MR. McALLISTER:

Q. Mr. Grimsley, does the New Jersey Power & Light Company file with the Federal Power Commission various annual reports and sworn statements which set forth the results of its operations?

A. It does. It has.

Q. It does and it has, isn't that correct?

A. Well, I think I should prefer to reply to that it has.

Q. It has filed it?

A. Yes, sir.

Q. Have you examined certain of those reports?

A. I have.

Q. Particularly which reports set forth the results of their operations so far as energy transmission and generation and so forth is concerned?

A. Well, some of the data, if not all, may have been taken from—

Q. (interposing) I am not referring to any particular exhibit. I am referring to their reports.

A. Well, I have used all of those reports available in making the study and in preparing this general picture of the operations of the company.

Q. What I am asking you, what reports are those, the annual reports of the company?

A. I think I have used both, which can be checked, F. P. C. No. 1 and the power statement form 64.

Q. Have you prepared an exhibit, Mr. Grimsley, which will set forth the result of your studies of the New Jersey Power & Light Company?

A. I have.

Q. I show you an exhibit and ask you if that is the exhibit which you have prepared.

A. That is correct.

MR. McALLISTER: I offer at this time the exhibit which is identified by the witness, as Commission's counsel Exhibit No. 3.

MR. PAXSON: Just a moment, I would like to see what this is.

BY EXAMINER SPENCER:

Q. In the meantime, Mr. Grimsley, is that made from reports on file with the Commission?

A. Yes, sir. It is purely statistical.

BY MR. McALLISTER:

Q. But nevertheless the figures you record here were taken from the reports filed with the Federal Power Commission?

A. That is correct.

Q. And those reports are the reports which you set forth in the footnote at the bottom of this exhibit?

A. That is correct.

MR. AUTENRIETH: Subject to a motion to strike it later, I won't have any further objection. I reserve that right.

EXAMINER SPENCER: Let the record so show.

MR. McALLISTER: That is one of the most unusual motions. That is one that prevails at all times. It doesn't call for a ruling at this time, and if there is a basis for such ruling it must be made to appear at the time the motion is made.

EXAMINER SPENCER: Let the record show the report is admitted as Commission's Exhibit No. 3. Any motion you want to make to strike or otherwise can be entertained later.

(The document referred to was marked Commission's Exhibit No. 3 and received in evidence.)

MR. AUTENRIETH: That is all I desire to do, if something develops later.

EXAMINER SPENCER: You may proceed, Mr. McAllister.

BY MR. McALLISTER:

Q. Mr. Grimsley, where does the New Jersey Power & Light Company operate?

A. New Jersey Power & Light Company operates in the northwestern section of New Jersey.

Q. By reference to Exhibit No. 1 will you indicate how the territory is served and the general area served by this company is indicated on that exhibit?

A. This system, together with that of Metropolitan Edison Company, in Pennsylvania, forms a continuous service area of all Associated Gas & Electric properties extending ffom the New York state line south through western New Jersey into eastern Pennsylvania. The territory served by New Jersey Power & Light Company, is identified on Exhibit No. 1 by the green color, or with the green color.

Q. What generating facilities does the Jersey Power & Light Company own and operate?

A. To meet its own requirements and deliver energy to adjoining systems—

Q. (interposing) Deliver energy—

A. (interposing) New Jersey Power & Light Company has steam generating plant of 55,000 kilowatts located at Holland, New Jersey, which generated 323,725,360 kilowatt hours during the year 1937.

The remaining capacity in the system consists of a small hydro plant of 270 kilowatts, which is not interconnected with the main transmission network. Inasmuch as the Holland plant is out of operation from 300 to 900 hours a year, the system is for such periods entirely dependent upon outside sources of supply.

New Jersey,—

MR. PAXSON: I object to the statement inasmuch as it is out of operation. Is there any testimony it is out of operation?

BY MR. McALLISTER:

Q. What does the record show, Mr. Grimsley?

A. Your own statement in the report.

Q. When you say record, you mean report of the company itself to the Federal Power Commission?

A. That is right.

Q. As contained in the regular reports and sworn to by company officials?

A. That is correct.

EXAMINER SPENCER: Will that report be offered?

MR. McALLISTER: The particular page in the report or the particular part will be read into the record, depending upon this area and the amount of material included.

EXAMINER SPENCER: Subject to that the objection is overruled.

BY MR. McALLISTER:

Q. I hand you the report and ask you to read it.

A. The New Jersey Power & Light Company's annual report on Form F. P. C. No. 1, filed April 30, 1938, for the year 1937, on page 532, line 7, shows opposite or on the same line with the entry "Connected to load" Gilbert plant 7,837 hours. On line 9, opposite the entry "Held in cold reserve" 923 hours.

In the New Jersey Power & Light Company's statement of the production, transmission and utilization of electrical energy for the years 1934, 1935, 1936, page 7, shows the Holland plant was connected to load during 1934, 8,106 hours, in 1935 7,887 hours, in 1936 8,449 hours.

Q. Mr. Grimsley, what would be the total number of hours connected to load if it was continuously operated throughout the 365 days in the year?

A. Usually 8,760 hours is used.

Q. So that the difference between 8,760 and the number of hours you have given indicate the number of hours it was not connected with load?

A. That is correct.

Q. So that the reports of the company to the Federal

Power Commission do record support for the statement which you made that the Holland plant was out of operation 300 to 900 hours per year?

A. They do.

Q. Mr. Grimsley, in the course of your testimony, you have referred to interchange between New Jersey Power & Light Company and certain companies located in the State of Pennsylvania.

Will you state or indicate from your exhibit what the magnitude of this transaction is?

A. New Jersey Power & Light Company from the records is an important source of power for Metropolitan Edison Company in Pennsylvania, to which it supplies annually in amount perhaps from 2,000,000 to 7,000,000 kilowatt hours of firm power and from 150,000,000 to 200,000,000 kilowatt hours of non-firm power. It also supplies non-firm power to Central Hudson Gas and Electric Corporation in New York, although transactions in this direction have diminished from over 20,000,000 kilowatt hours in 1935 to only 21,000 kilowatt hours in 1937. Central Hudson Gas and Electric Corporation operates in New York state and delivered to New Jersey Power & Light Company from 14,000,000 to 21,000,000 kilowatt hours per year during the last four years.

Q. Mr. Grimsley, in your statement with respect to the delivery of firm power to Metropolitan Edison Company, you say that ranged from 2,000,000 to 7,000,000 kilowatt hours per year, firm power during the years 1934 to 1937 inclusive. Will you examine the Exhibit, which is Exhibit No. 3, and indicate where that information is shown?

A. On Exhibit No. 3 New Jersey Power & Light purchased from Metropolitan Edison Company firm energy during the year 1934, 646,642 kilowatt hours; in 1935, 654,077 kilowatt hours; in 1936, 1,586,794 kilowatt hours.

Non-firm power energy purchased from Metropolitan

Edison for the year 1934 was 151,142,208 kilowatt hours; 1935, 61,241,795 kilowatt hours; 1936, 35,490,468 kilowatt hours; and 1937, 55,359,136 kilowatt hours.

Q. Mr. Grimsley, what I had in mind was not the power purchased. The question related to the energy sold to Metropolitan Edison and I note in column headed 1937 opposite item 1, subdivision F, there is a blank. I show you a photostatic copy of annual report of New Jersey Power & Light Company and ask you whether you can supply that figure which supports the statement that the quantity of firm energy sold ranged from two to seven million kilowatt hours per year during the year 1937 is shown by the reports of this company?

A. The report shows the New Jersey Power and Light Company delivered to Metropolitan Edison Company for the year 1937, 6,634,089 kilowatt hours.

Q. Had that figure been available it would have been included in the exhibit at the time it was prepared?

A. That is correct.

Q. Now, Mr. Grimsley, will you state what energy was received from New Jersey Power & Light Company from other public utilities?

A. Energy obtained from adjoining systems in 1937 amounted to 84,000,000 kilowatt hours of which 14,000,000 were obtained from Public Service Electric and Gas Company, and the balance from outside the state.

Under contract dated February 6, 1937, however, Jersey Central will supply a considerable part of the capacity required. This contract, which will become fully effective, upon the completion—

MR. PAXSON (interposing): Just a moment. What are you trying to testify now? What is going to happen in the future?

THE WITNESS: No, under the terms of the contract.

MR. PAXSON: Or something else? The date on which the Public Utility statute was enacted was March 13, 1938, and I object to any inquiry as to what might happen.

EXAMINER SPENCER: That contract has been admitted in evidence, has it not?

MR. McALLISTER: It has.

EXAMINER SPENCER: Let the contract speak for itself.

BY MR. McALLISTER:

Q. Mr. Grimsley, the contract to which you have just made reference, is that the contract which you discussed in connection with your description of the property of Jersey Central Power & Light covering interchange between that company and New Jersey Power & Light?

A. That is correct.

MR. AUTENRIETH: The February 6, 1937 contract, is that the one you referred to?

BY MR. McALLISTER:

Q. Mr. Grimsley, will you state the location within which the Public Service Electric and Gas Company operates within the state of New Jersey as shown by Exhibit No. 1?

A. Public Service Electric and Gas Company serves the territory which extends from the northern boundary of New Jersey, south across the state as far as Trenton and Camden. It extends from New York to the Pennsylvania state line and serves a large industrial area in New Jersey. In addition to its electrical operations this company owns and operates extensive gas and transportation facilities in the state.

Q. What generating facilities does it own and operate?

A. Public Service Electric and Gas Company owns and operates five large generating stations with a total installed capacity of 684,450 kilowatts. In 1937 four of these power plants produced 2,154,430,978 kilowatt hours.

Perth Amboy plant with an installed capacity of 20,250 kilowatts did not generate any energy during the past four years. It is understood from the reports to be cold standby plant which could be put into service within 24 hours. In addition, this company purchased from other utilities 648,258,772 kilowatt hours and sold at wholesale to other utilities 57,921,060 kilowatt hours. The net available for the system in this year was 2,744,771,690 kilowatt hours.

Q. Mr. Grimsley, these figures to which you have made reference, are those figures which are reported by this company under oath in its various reports to the Federal Power Commission?

A. That is correct.

Q. Now, have you prepared a statement setting forth in tabular form the information reported by this company to the Commission showing its generating capacity by plants, annual operation of plants and other operating data showing its operation?

A. I have.

Q. I ask you if that is the exhibit to which you make reference and which was prepared by you?

A. This is the one.

MR. McALLISTER: Mr. Examiner, I offer at this time the exhibit identified by the witness and ask it be received in evidence as Commission counsel's Exhibit No. 4.

EXAMINER SPENCER: Any objection?

MR. PAXSON: No, reserving our right to object and cross examine thereafter.

EXAMINER SPENCER: It will be received as Commission's Exhibit No. 4.

(The document referred to was marked Commission's Exhibit No. 4 and received in evidence.)

BY MR. McALLISTER:

Q. Mr. Grimsley, at the time of the annual system peak, from what source does Public Service Electric and Gas Company secure its requirements?

A. In time of annual system peak, power plants of Public Service Electric & Gas Company supplied 471,900 kilowatts and received from other utilities 80,000 kilowatts including 9,000 kilowatts from Jersey Central Power & Light Company, 32,000 from Philadelphia Electric Company and 32,000 kilowatts from Pennsylvania Power and Light Company, and the remainder from other systems in New Jersey, Pennsylvania and New York.

Q. The figures that you gave there, Mr. Grimsley, refer to 1937, do they not?

A. That is correct. The total system load, including deliveries to several municipal systems and 100 kilowatts to Jersey Central plant at Wrightstown and New Lisbon amounted to 551,900 kilowatts. The generating capacity of Public Service Electric and Gas Company connected to the load at the time of the annual system peak was 563,850 kilowatts out of a total system capacity of 684,450 kilowatts. These figures indicate that Public Service Electric and Gas Company for economic and operating considerations used an appreciable supply of power from other utilities operating in New Jersey, Pennsylvania and New York in taking care of its annual system peak.

The inter-connections and energy transactions between Public Service Electric and Gas Company and Jersey Central Power & Light Company were discussed at some length previously and will be taken up again in greater detail later. Similarly the interconnections and energy

transactions between Public Service Electric and Gas Company and Staten Island Edison Corporation will be taken up in greater detail later.

Q. The figures you refer to throughout your statement, Mr. Grimsley, are those figures which are recorded and shown on Exhibit No. 4, are they not?

MR. PAXSON: Will you read that question, I could not hear that.

(The reporter thereupon read the pending question as recorded.)

BY MR. McALLISTER:

Q. I say the figures he used in his statement he just read into the record are those figures which were taken from Exhibit No. 4?

A. Well, I think all of the energy transactions, but the capacity transactions—

Q. (interposing) The capacity transactions are not shown on Exhibit No. 4?

A. Yes. Some of them. The annual system demand for 1937 amounted to 551,900, which I referred to, is shown there under system capacity and annual demand at time of system peak, and the system capacity of 684,450 is shown and the installed capacity connected at time of peak amounts to 563,850, is shown in the purchased capacity from other utilities, amounting to 80,000 are shown on this Exhibit.

Q. Are shown on this exhibit?

A. Are shown on this exhibit.

Q. The other figures which you stated in your testimony were obtained from what source?

A. The annual report made by the company to the Commission.

Q. Mr. Grimsley, where is the Staten Island Edison Corporation located?

A. The Staten Island Edison Corporation owns one

generating plant, which is located at Livingston, New York.

Q. Will you indicate on Exhibit No. 1 the area that is served by Staten Island Edison Corporation?

A. The territory shown on Exhibit 1 in red color and the legend as company E. Its operations are wholly confined to that of Staten Island in the state of New York. Livingston, it will be noted, is located at the northern extremity of the Island.

Q. You mentioned that there was one generating plant at Livingston. What is the capacity of that plant?

A. The capacity of that plant is 47,500 kilowatts, of which 16,000 kilowatts is cold reserve, consisting of two units installed in 1916 and 1920. For additional reserve capacity the Staten Island Edison Corporation depend to a capacity of 25,000 kilowatts upon its interconnection with Public Service Electric and Gas Company at Mechanic Street Substation, located in Perth Amboy, New Jersey.

This statement of additional reserve appears on page 28 of the power system statement for the year December 31, 1937 filed with the Commission.

Q. By whom?

A. By the Staten Island Edison Corporation, form 64. This interconnection which can supply emergency service or service during repair periods and for future growth is much more reliable and dependable by reason of the availability of the Jersey Central facilities connected to Public Service Company's Mechanic Street Substation.

Q. Staten Island, I believe you stated, filed certain annual reports with the Federal Power Commission, showing the result of its operations?

MR. PAXSON: Just a moment. May I have that last question and answer read? It seems we are getting a lot of opinions and conclusions in here.

MR. McALLISTER: As I was stating, Mr. Examiner, it seems rather unusual to rehash and reconstruct

questions and answers of this character that are read carefully and slowly so that they can be objected to without anything, in substance, being derived from the objection, but I have no objection to going ahead and reading the question and answer.

EXAMINER SPENCER: Read that last question and answer.

MR. McALLISTER: Of course at any time I will be glad to have him read back any question, but it was the preface to your request that indicated you had something else in mind.

MR. PAXSON: That is the reason I asked it.

EXAMINER SPENCER: Read the last question and answer.

(The reporter thereupon read the preceding question and answer as recorded.)

MR. PAXSON: I object to that as a conclusion. Nothing has been shown about any interconnection between Jersey Central and Staten Island or any connection. That is opinion testimony.

MR. McALLISTER: It is not correct, Mr. Examiner, because the testimony here has shown the interconnection between Jersey Central and the Mechanic Street substation and between Mechanic Street substation and Staten Island Edison Corporation.

EXAMINER SPENCER: I understand the witness states in his expert testimony in that connection that the interconnection is beneficial to the Staten Island Edison Corporation.

MR. McALLISTER: He has made the statement very clearly after relating all the facts that are necessary in his opinion to support the statement that he makes.

MR. PAXSON: It has not been shown that Staten Island has any right to or can rely on anything passing between Jersey Central and Public Service. It has not been shown there is any firm contract whereby Public Service is entitled to get any electrical energy from Jersey Central.

EXAMINER SPENCER: Is there anything in the record to show any interconnection there?

MR. McALLISTER: Most assuredly, Mr. Examiner, even Exhibit No. 1, the map, shows that interconnection in there, and it has been shown directly by the testimony of the witness that the Jersey Central Power & Light Company connects with Public Service and Gas Company at Mechanic Street substation of the latter company, and there is an interconnection between that same substation and Staten Island Edison.

EXAMINER SPENCER: My recollection is there was evidence to that effect. There was no testimony it was firm power.

MR. PAXSON: There is evidence there is an interconnection, if your Honor please, at the Mechanic Street substation or somewhere in that vicinity. There has been some testimony there is an interconnection between Staten Island and Public Service, but there is no testimony that Staten Island can rely on any power coming from Jersey Central, that it is in any way dependable. He says it is more reliable. The evidence is it has no firm power between Public Service and Jersey Central as far as I understand Mr. Grimsley. The contract provides there is no firm power so how can anybody rely on something that is not firm, whether casual or incidental, I don't know.

If Mr. Grimsley would only state the facts and

not give conclusions we could get along further. Let the Commission find the conclusions.

BY EXAMINER SPENCER:

Q. Mr. Grimsley, do you know whether there is any contract providing for firm power in that connection or any other power?

A. I will come to that.

MR. McALLISTER: Mr. Examiner, I would just like to support the testimony which the witness has put in and the conclusions which he has drawn to show from the report of the company, from Staten Island Edison Corporation, they state under oath in their report to the Commission exactly what Mr. Grimsley has stated on the record as his opinion from the study of the statistics which he has followed.

EXAMINER SPENCER: And you wish to introduce that?

MR. McALLISTER: I would like to have included in the record, page 28 of the power system statement filed with the Federal Power Commission by Staten Island and received by the Commission on July 21, 1938.

EXAMINER SPENCER: All right.

MR. McALLISTER: And page 28 of the same report which shows present reserve capacity of (a) and I am reading from page 28—

EXAMINER SPENCER: (interposing) All right.

MR. McALLISTER: Their present reserve capacities are (a) one 10,000 Kw and one 6,000 Kw turbine which can be started at any time and (b) interconnection with Public Service Electric and Gas Com-

pany which has a capacity of 25,000 KVA and is connected to system continuously. Transmission lines are capable of supplying all parts of system from interconnection. In other words, they not only tied it in in their statement here, but they say the transmission lines from the point tied in are sufficient to carry its energy to all points of the system.

EXAMINER SPENCER: You offer them in evidence?

MR. McALLISTER: Those two sheets.

EXAMINER SPENCER: I assume there is no objection?

MR. AUTENRIETH: I have no objection to them being introduced as a statement by Staten Island Edison. I don't think Jersey Central Power & Light is any way bound by the report of Staten Island where such an important thing as the status of Jersey Central is involved, but you can introduce them for what they are worth.

EXAMINER SPENCER: Let the record show pages 23 and 28 of this report are made a part of the record by reference.

BY MR. McALLISTER:

Q. Now, Mr. Grimsley, you are more familiar with that report than I am, and I would like to have you indicate whether there are any other pages in there which show the capacity of the plant of Staten Island at the time of its peak load.

A. And demand?

Q. And demand, yes.

A. On page 5 of this report the net demand on plant was 37,700 kilowatts. Therefore—

Q. (interposing) What was the total installed capacity as stated by the report?

A. The total installed capacity was 47,500.

Q. And its cold standby?

A. 16,000.

Q. Leaving what amount?

MR. PAXSON: Does that report state cold standby or is that your conclusion?

MR. McALLISTER: The statement I just read, Mr. Paxson, so stated, and said it could be started on one day's notice. The statement I just read in there states that.

MR. PAXSON: I just asked you.

THE WITNESS: The rating of the turbines—

EXAMINER SPENCER: (interposing) Just a moment, the last question that Mr. McAllister asked, answer that. He asked the difference—

BY MR. McALLISTER:

Q. I asked you what the installed capacity was, what the cold standby was, that the operating capacity was at time of annual peak, and then I wanted to match that with the total peak load and demand at that particular time. I think you have all those figures there and I would like to have you state them for the record so it will clearly show on what those figures are based and in support of your conclusion. You have stated it in generalities, but I would like to have it in detail.

EXAMINER SPENCER: Before you answer that question, Mr. Grimsley; we will recess until 1:30. You can resume after recess.

(Whereupon at 12:30 o'clock p. m., a recess was taken until 1:30 o'clock p. m. this day.)

Afternoon Session.

(Met, pursuant to the recess, at 1:30 o'clock p. m.)

EXAMINER SPENCER: Gentlemen, the hearing will now come to order.

A. H. GRIMSLEY,

the witness at the time of adjournment, resumed the stand and, upon further examination, testified as follows:

Direct Examination (Resumed)

BY MR. McALLISTER:

Q. Mr. Grimsley, at the time of the taking of the recess you were giving consideration to a question which I asked. I asked you to point out in the report of the Staten Island Edison Corporation what was the capacity of the generators on the line at the time of the annual peak and the reserve capacity of the system available in case of the failure of a generator upon which they were relying at the time of that system annual peak. Now, by reference to the annual report which was filed with the Commission, will you please state specifically what that shows to be the annual peak of the Staten Island Edison Corporation?

A. It reported a peak for the year 1937 of 31,700 kilowatts, occurring December 27th between 6 o'clock and 7 o'clock p. m.

Q. What does the report show to be the capacity of the generators on the line at that time?

A. There were two generators, name-plate reading, 30,000 kilowatts. On page 5 the statement is made that their total capacity at that time was 35,000 kilowatts.

Q. In case of failure of one of these generators, what would be the available source of supply to the Staten Island Edison Corporation?

A. This statement appears on page 5 of the report, Form No. 64, that additional turbines totaling 16,000 kw. and additional boilers not operating but could be put in operation at any time.

Therefore, if one of the 15,000 k. w. turbines would fail at the time of such a peak, the equivalent supply would be drawn from Mechanic Street Substation of the Public Service Company of New Jersey.

BY MR. PAXSON:

Q. Are you saying that the report says that? You are testifying as to what the report shows, or are you giving your opinion?

A. What I am saying is that that would automatically take place.

Q. You were testifying what this report says. Now, I want to know if the last statement you made about Mechanic Street Substation comes from that report?

A. All of these facts I just related come from this report.

Q. Is there any statement in the report to that effect, saying that they are relying upon the Mechanic Street Station to take care of their own peak load?

A. Oh, yes. That was read into the record this morning.

MR. PAXSON: I just want to understand what he says.

MR. McALLISTER: I want to make it clear.

THE WITNESS: Page 28—"Present reserve capacity (a), one 10,000 kilowatt and one 6,000 kilowatt turbine which can be started at any time and, (b) inter-connection with Public Service Electric and Gas Company which has a capacity of 25,000 kilowatts and is connected to system continuously. Transmission lines are capable of supplying all parts of system from inter-connection."

Therefore, it follows that if one of these turbines failed, then automatically that load would be picked up by the Mechanic Street Substation.

BY MR. McALLISTER:

Q. That connection between Staten Island and Mechanic Street Substation is operated as a closed connection, is it?

A. At all times. They are operating two systems in parallel or in synchronism.

Q. In connection with your study of the Staten Island Edison Corporation, have you prepared a statistical exhibit from the annual reports and other reports filed by the Staten Island Edison Corporation showing the results of their operations and generation and other information for the years 1936, 1937, and also the years 1934 and 1935?

A. Yes, sir.

Q. Is that the exhibit that you say you have prepared (indicating)?

A. It is. This is the exhibit (indicating).

MR. McALLISTER: Mr. Examiner, I offer as Commission Exhibit No. 5 the exhibit which has just been identified by the witness and I ask that it be received in evidence as Commission Exhibit No. 5.

EXAMINER SPENCER: Without objection it will be received and marked Commission Exhibit No. 5.

MR. PAXSON: No objection, except reserving the right to check.

(The document above referred to was received in evidence and marked Commission's Exhibit No. 5.)

BY MR. McALLISTER:

Q. Mr. Grimsley, does Exhibit No. 5 show the electric energy or power generated in the year 1937 by Staten

Island Edison Corporation?

A. It does.

Q. What does the exhibit show?

A. In 1937 Staten Island Edison Corporation generated in its Livingston Power Plant 127,054,880 kilowatt hours.

Q. What did it purchase and deliver through other utility systems?

A. In addition, this system purchased from Public Service Electric and Gas Company for the same period 3,093,400 kilowatt hours over the line connecting the Mechanic Street Substation in Perth Amboy, New Jersey, and its Atlantic Substation on Staten Island, New York.

During the same year Staten Island delivered to the Mechanic Street Substation 3,140,290 kilowatt hours.

Q. Does your exhibit show the quantity of energy delivered to and from the Public Service Electric and Gas Company by Staten Island Edison Corporation for the years preceding the year 1937?

A. It does.

Q. It shows, does it not, the deliveries and purchases for 1935 and 1936?

A. That is correct.

Q. What was the source of the information which you reported on Exhibit No. 5, Mr. Grimsley?

A. All data for the years 1934, 1935, and 1936, are taken from system reports to the Federal Power Commission on form 11-127. All data for 1937 was taken from reports to the Federal Power Commission on forms F. P. C. No. 1 and F. P. C. No. 64.

Q. Mr. Grimsley, under what arrangement is the electric energy delivered to Staten Island Edison Corporation by Public Service Electric and Gas Corporation?

A. A copy of contract dated January 20, 1936, covering emergency service and economy interchange between Public Service Electric and Gas Company and Staten Is-

land Edison Corporation through the Mechanic Street Substation is on file with this Commission and is identified as Public Service Electric and Gas Company Rate Schedule No. 5.

MR. McALLISTER: Mr. Examiner, I ask that the rate schedule just referred to by the witness and identified in the files of the Commission as Public Service Electric and Gas Company Rate Schedule F. P. C. No. 5 be received in evidence by reference.

It is an official record, and, as I stated before, the file is in the Commission and is entitled to consideration.

EXAMINER SPENCER: Is there any objection?

MR. PAXSON: No objection.

EXAMINER SPENCER: It will be received by reference.

(The document referred to was received by reference.)

MR. McALLISTER: Mr. Examiner, this morning there were a number of exhibits having no number which were put in. They were put in by reference and were identified by the designation in the files of the Commission by number, the same as you would identify a tariff schedule, without actually putting them into the record.

EXAMINER SPENCER: Very well. A number will not be assigned to it.

BY MR. McALLISTER:

Q. Mr. Grimsley, have you prepared a statement showing the energy transactions between the Jersey Central Power and Light Company, Public Service Electric

and Gas Company, New Jersey Power and Light Company, and Staten Island Edison Corporation for the year 1937?

A. I have.

Q. Is this the statement which was prepared by you (indicating)?

A. This is it.

Q. From what source was this information obtained?

A. It was taken from System Reports to the Federal Power Commission.

Q. By what you mean the System Reports filed by each individual company?

A. That is correct.

MR. McALLISTER: Mr. Examiner, I offer the exhibit just identified by the witness as Commission Exhibit No. 6 and ask that it be received in evidence.

MR. PAXSON: I would like a few minutes to look at this one.

EXAMINER SPENCER: You may do so.

MR. PAXSON: No objection.

EXAMINER SPENCER: It will be received as Commission's Exhibit No. 6.

(The document above referred to was received in evidence and marked Commission's Exhibit No. 6.)

BY MR. McALLISTER:

Q. Mr. Grimsley, what sources are supplying the requirements of electric energy to the operating systems in the State of New Jersey which are shown on your exhibit received in evidence as Commission's Exhibit No. 6?

A. The facilities of Jersey Central Power and Light Company, Public Service Electric and Gas Company, New Jersey Power and Light Company and Staten Island Edison Corporation.

Q. Those are the four companies?

A. Yes.

Q. I am asking you from what source they secure their requirements both within the State and from without.

MR. PAXSON: I object to the question. There is nothing on this exhibit which shows anything about anything coming from without except Staten Island—if he is referring to that.

EXAMINER SPENCER: Does that exhibit show the sources from which they drew their requirements?

MR. McALLISTER: No, Mr. Examiner.

THE WITNESS: It shows the purchases and sales between the four companies respectively.

MR. PAXSON: I have no objection to his telling about the sales at all.

EXAMINER SPENCER: You may proceed.

THE WITNESS: Will you repeat the question, please?

BY MR. McALLISTER:

Q. I am asking you from what sources they secure their requirements.

EXAMINER SPENCER: Are you examining the witness with respect to this particular exhibit, Mr. McAllister?

MR. McALLISTER: I am not, Mr. Examiner.

THE WITNESS: Exhibits Nos. 2, 3, 4 and 5, show energy transactions with the Philadelphia Electric Company and Light, Central Hudson Gas and Electric, and Metropolitan Edison, located in adjacent States, namely, New York and Pennsylvania.

BY MR. McALLISTER:

Q. In other words, those four exhibits to which you refer show both the sources of power for each individual company within the State and they also show the sources of energy, if any, coming to those systems from without the State?

A. That is correct.

Q. In other words, a complete answer to the question can be obtained by examining those four exhibits to which you referred?

A. That is correct.

Q. And those exhibits show the operating utilities in New Jersey import as well as export energy to the adjoining States?

A. That is correct.

Q. Will you please describe the operations which result in or which make possible this interchange of energy between operating companies in the State of New Jersey and operating companies in Pennsylvania and other adjoining States?

A. For economic and operating reasons, and because it is distinctively advantageous, the utilities operating in New Jersey not only import energy from Pennsylvania and New York but also export large amounts of energy to Pennsylvania, all of which they place over this network shown on Exhibit No. 1. Monthly transfers of energy across all State boundaries are reported to the Federal Power Commission by the utilities, which maintain records of such interstate flows of energy. A compilation of such data for the State of New Jersey over the period January to July, 1938, is prepared in the form of an exhibit.

Q. Is this (indicating) the exhibit to which you refer?

A. Yes, sir; it is.

Q. Was that exhibit prepared by you?

A. That is correct.

MR. McALLISTER: Mr. Examiner, I offer in evidence as Commission's Exhibit No. 7 the statement just identified by the witness.

EXAMINER SPENCER: The statement will be received.

MR. PAXSON: Just a moment, please. May I look at this exhibit?

EXAMINER SPENCER: Yes, certainly.

MR. PAXSON: They are filing so many statistics that we do not want to go too fast. There may be objections to it.

EXAMINER SPENCER: I believe you said that was prepared from reports or records of the Commission?

MR. McALLISTER: His testimony so stated, Mr. Examiner, that it was prepared from the Commission's records.

EXAMINER SPENCER: I so understood.

BY MR. McALLISTER:

Q. Is that correct, Mr. Grimsley?

A. Yes, sir.

MR. PAXSON: I object to the receipt of this statement in evidence as there is nothing on the exhibit which in any way ties it up with the Jersey Central Power and Light Company, whose status is now under discussion, and it is just a general compilation of what Jersey exports and imports. It may be interesting, but wrong conclusions might be drawn therefrom.

EXAMINER SPENCER: What bearing does this have upon the question, Mr. McAllister?

MR. McALLISTER: The exhibit merely shows part of the whole picture relating to the tie-up between the various companies and their interstate operations. It shows the extent to which the State of New Jersey relied upon energy from adjoining states to satisfy their requirements. You will note that is stated in thousands of kilowatt hours. So those transactions are very substantial and very large if you add on there another three ciphers to each one of the figures that appears thereon. The significance of the exhibit will be made to more clearly appear as the testimony of the witness progresses; and the operations of which this is an integral part are set forth in the record.

MR. PAXSON: If the Examiner please, this exhibit might be interesting to someone, but I contend it has no bearing in this case. The question is purely as to the status of the Jersey Central Power and Light Company. There is nothing in any of these exhibits which shows the Jersey Central Power and Light Company imports a kilowatt from outside the State.

THE WITNESS: We propose to show that.

MR. PAXSON: I have made my objection.

MR. McALLISTER: The only trouble, Mr. Examiner, is that Mr. Paxson goes too rapidly. If he waits until the end of the case then it may appear to him more clearly how this transaction took place. We can not show our whole case instantaneously; otherwise we would not be here as long as we have been. We must take it up in an orderly way.

EXAMINER SPENCER: There has been evidence that there are inter-connections between the Jersey Central and other utilities which do an interstate business, has there not?

MR. McALLISTER: Most assuredly. Every

one of the exhibits so far introduced shows transactions outside of the State, even including the Jersey Central.

EXAMINER SPENCER: There has been some testimony that the Jersey Central Power and Light has some inter-connections with other companies.

MR. McALLISTER: And there have been some exhibits introduced which show these other companies have had some interstate or outside the State transactions.

MR. PAXSON: But there is nothing in any of these exhibits to show that Jersey Central imports or exports one kilowatt.

EXAMINER SPENCER: I will overrule the objection and admit it in evidence as Commission's Exhibit No. 7.

MR. PAXSON: An exception, please.

EXAMINER SPENCER: An exception is noted for respondent.

(The document above referred to was received in evidence and marked Commission's Exhibit No. 7.)

BY MR. McALLISTER:

Q. Is this Exhibit No. 7, Mr. Grimsley, an exhibit which shows that during each and every month energy was imported from other States to satisfy the requirements of operating utilities in the State of New Jersey?

MR. PAXSON: Just a moment, please. He is talking about the operating utilities in the State of New Jersey. I don't know what that means.

Will you name a few of them? I think there are other operating utilities.

MR. McALLISTER: I am referring to those utili-

ities that are shown on Exhibit No. 1 and identified in the legend as B. C. D. and E., the Public Service Electric and Gas Company, Jersey Central Power and Light Company, New Jersey Power and Light Company, and Staten Island Edison Corporation.

MR. PAXSON: I call attention to the fact that Staten Island Edison Corporation is not a New Jersey utility.

MR. McALLISTER: That is on Staten Island. We will admit that. We have dealt with it.

Then the three companies that are referred to there, Mr. Grimsley, eliminating Staten Island.

THE WITNESS: During every month during this period it shows the State of New Jersey received from and delivered to other States electric energy in large quantities.

BY EXAMINER SPENCER:

Q. Do you mean the State of New Jersey or do you mean these three companies?

A. I mean these companies as shown in this network, Exhibit No. 1.

BY MR. McALLISTER:

Q. Will you please name the three companies?

A. Philadelphia Electric Company—

Q. Now, Mr. Grimsley, we are talking about those in New Jersey which have received the energy from outside the State.

A. Public Service Electric and Gas Company, New Jersey Power and Light Company and Staten Island Edison Corporation.

Q. The Staten Island is over in New York?

A. It receives and delivers energy.

BY EXAMINER SPENCER:

Q. In New Jersey?

A. Yes, sir; in New Jersey.

EXAMINER SPENCER: Then, it would be confined to the two companies.

BY MR. McALLISTER:

Q. The three companies?

BY EXAMINER SPENCER:

Q. Did the Jersey Central Power and Light Company receive any?

A. The three companies.

Q. Specify which three.

A. I will name them again to make the record clear, if you wish.

BY MR. McALLISTER:

Q. Will you please do so?

A. Public Service Electric and Gas Company, Jersey Central Power and Light Company and New Jersey Power and Light Company.

MR. McALLISTER: Mr. Examiner, may we have a recess of five minutes in order to straighten out some points here?

EXAMINER SPENCER: We will recess until 2:25.

(Thereupon a short recess was taken, after which the following occurred:)

EXAMINER SPENCER: You may proceed, Mr. McAllister.

BY MR. McALLISTER:

Q. Mr. Grimsley, by reference to Exhibit No. 1, will you state for the record the transmission lines and interconnections shown thereon with reference to that area outside of New Jersey which is indicated in your testimony

as relied upon for the supplying of electric energy to the operating utilities in New Jersey which you named, namely, Public Service Electric and Gas Company, Jersey Central Power and Light Company and New Jersey Power and Light Company?

A. The map submitted as Exhibit No. 1 was prepared by the Federal Power Commission from individual system maps furnished by the electric utilities shows an extensive network of interconnected high tension transmission lines covering the southern part of the State of New York, northeastern and western part of New Jersey, the eastern and southeastern part of Pennsylvania and northeastern part of Maryland and Delaware. Single and double circuit lines of 66,000, 110,000, 132,000 and 220,000 volts extend from one end of this territory to the other, crossing State boundaries and interconnecting the power resources in this area into one large electric system. Among the utilities composing this system the following are of particular interest: Public Service Electric and Gas Company is interconnected with Staten Island Edison Corporation operating in New York, with Philadelphia Electric Company and Pennsylvania Power and Light Company operating in Pennsylvania and with Jersey Central Power and Light Company and New Jersey Power and Light Company operating in New Jersey.

Philadelphia Electric Company directly and through subsidiaries operates interconnected facilities in Pennsylvania, New Jersey, Maryland and Delaware. New Jersey Power and Light Company is interconnected with Central Hudson Gas and Electric Corporation operating in New York and Metropolitan Edison Company operating in Pennsylvania. Jersey Central Power and Light Company is interconnected with both Public Service Electric and Gas Company and New Jersey Power and Light Company.

One of the most important electrical and mechanical

characteristics of an interconnected alternating current power system is that each generator connected to such a system, regardless of the State in which it may be located, must operate in exact step or synchronism with every other generator. The electrical ties between each generator and every other one is as definite and real as though they were mechanically interconnected by shafting and gears. It is no more possible for an individual generating unit of an interconnected system to set its own pace than it would be for an individual player in an orchestra to decide on his own time or rhythm. Just as the conductor of an orchestra or one of the instruments must set the pace for all the players in the orchestra, so must one predetermined generating unit or group of units, ordinarily referred to as the governing unit or governing station, set the pace for all generating units in all the powerhouses of the system. This control of the synchronous speed in an interconnected system can be accomplished only by the governing unit or governing station picking up, or dropping, such portion of each load change as is necessary to dominate and control the speed of each of the other generating units on the system, and by exchanging such amounts of synchronizing power or energy as are necessary to hold the other generators in step.

Interconnected, operating in synchronism and interchanging power among themselves, these utilities together represent one large electric system serving the State of New Jersey and part of the adjoining states. The operating unity of this system can be perceived from the fact that they all operate in synchronism, with the electric frequency controlled and maintained for the whole by one of the larger power plants in the network which assignment is predetermined and not the result of accident. The flow of energy over the transmission lines of this system is governed by the basic laws of the electrical phenomenon. During any particular period of time energy from any one

power source will flow in all lines or circuits which are available to it at that time by the relative location and magnitude of the power supply and power consumption centers. In its flow electric energy does not recognize ownership of lines, and in serving a load will cross State boundaries when operating conditions in the network require such flow to take place. For the system as a whole any fluctuations in load or in supply in any part of the system are momentarily reflected through the whole of it. Any interchange of power between two utilities in one part of the system has a definite effect on the amount of energy which either of these two can receive from or deliver at the same time to utilities in another part of the system.

It follows, therefore, that energy delivered in large amounts by Jersey Central Power and Light Company to Public Service Electric and Gas Company at Mechanic Street directly affects, in amount and in time, the energy transactions between the latter company and either Philadelphia Electric Company or Pennsylvania Power and Light Company, or both. As established previously, deliveries of energy to the Mechanic Street substation represent an important outlet for the output of the South Amboy power plant. In turn, the availability of this energy to Public Service Electric and Gas Company is important not only as a source of power to supply its load, but it affects also this Company's transfers of energy in interstate commerce.

Q. Right at this point, Mr. Grimsley, before you proceed further, you made reference there to the South Amboy Power Plant. Who owns and operates that plant to which you made reference?

A. Jersey Central.

Q. Jersey Central Power and Light Company?

A. That is correct.

Q. Will you please proceed?

A. The realization on the part of some of the utilities serving adjacent territories in New Jersey and Pennsylvania of the benefits of a coordinated and to some extent unified operation resulted in the establishment of the so-called Pennsylvania-New Jersey pool.

By an agreement dated September 16, 1927, and by a number of supplements thereto Public Service Electric and Gas Company, Philadelphia Electric Company and Pennsylvania Power and Light Company have established a coordinated method of operating their existing electric facilities and the development of new facilities which has made possible improvements of service, savings in investment and expenses and other benefits to each of the three systems and thereby to the public served by each.

The effects of the coordinated operation of these three utilities on the electric service furnished by them and on the relation of each to other interconnected utilities not members of the pool can be seen from the following information submitted to the Federal Power Commission by Public Service Electric and Gas Company in its power system statement for the year 1937.

MR. PAXSON: If the Commission please, I move the testimony of Mr. Grimsley just given be stricken upon the ground that it is largely hearsay. He has purported to state all about the different transactions of Pennsylvania and Maryland, and says they are in synchronization and parallel, but it has not been shown that he knows anything about those systems; it is what he has read somewhere. I do not think that type of testimony is competent to establish the status of Jersey Central Power and Light Company.

EXAMINER SPENCER: The Examiner understands he is testifying from reports on file with this Commission.

MR. McALLISTER: That is correct. That is as I understand it.

EXAMINER SPENCER: His opinion is being given upon the facts which are on file.

MR. PAXSON: He says they come from the reports. We have not seen any of the reports of the Pennsylvania Power and Light or Delaware reports. He is drawing conclusions. If he wants to put the reports in evidence let him do it. He is making a lot of general conclusions as to operating matters. Perhaps he can do that as an expert; but he is also purporting to testify to a lot of facts.

EXAMINER SPENCER: I will hear from you, Mr. McAllister.

MR. McALLISTER: These are official reports on file with the Commission that are entitled to consideration as concerning records of operation maintained under the direction of and by order of the Federal Power Commission and reported annually to the Commission. The same identical report is filed by all utilities or are required by law to be filed. So there is no question as to the correctness and reliability of the energy transactions of operating characteristics or the physical characteristics of the property as recorded in these annual reports.

MR. PAXSON: If the Commission please, I do not see how we can cross examine a report. I do not see how it can be said that the Jersey Central Power and Light Company is in any way bound by any reports of a half a hundred different companies throughout the United States that are on file. We are not put on notice of it; we are not bound by it; and it does not mean anything so far as the Jersey Central Power and Light Company is concerned. It is on a certain

theory and as a basis for it he is making large statements of fact, as to synchronization, being in parallel, and he is drawing all kinds of inferences. It is entirely too broad and is all hearsay.

BY EXAMINER SPENCER:

Q. Mr. Grimsley, I understand you have testified from facts which you have secured from official records?

A. That is correct—and from observations on the property.

Q. Facts which you procured from reports and from your own knowledge and information?

A. Absolutely.

EXAMINER SPENCER: I shall overrule the objection.

MR. PAXSON: I note an exception, if Your Honor please.

MR. AUTENRIETH: Do I understand the basis of the ruling is that because a report is filed by some company not a party to this proceeding, something on which we can not cross examine, that we are bound by it?

EXAMINER SPENCER: No, I do not mean that: Commission's counsel will furnish the respondent with the names of the reports and where they can be found, if counsel so desire, and I so direct.

MR. AUTENRIETH: If we are to be confronted by facts we should be confronted in such manner with the statement itself so that it can be analyzed, to see whether it states correct facts. The report is blind.

EXAMINER SPENCER: I understand whatever facts come from the reports will be available to you. If there are any expert opinions stated, they are subject to rebuttal, of course.

MR. AUTENRIETH: That means we would have to go out into the field on the properties and check the reports as to accuracy. But we are confronted with this evidence. I do not think it clothes them with any great sanctity as evidence just because they are filed with the Commission.

EXAMINER SPENCER: This will be received only insofar as it affects the Jersey Central Power and Light Company.

MR. AUTENRIETH: I would like to add my objection on behalf of the Jersey Central to the reception in evidence.

EXAMINER SPENCER: An exception for the Jersey Central Power and Light Company is noted.

You may proceed.

BY MR. McALLISTER:

Q. Mr. Grimsley, I show you power system statements filed on behalf of Pennsylvania Public Service. I mean I show you statements filed on behalf of Public Service Electric and Gas Company received by the Commission on December 21, 1937, and I will ask you if that is the report to which you refer.

A. Yes, sir; it is.

Q. It is a verified, sworn report of that company?

A. Yes, sir.

Q. Signed by whom?

A. William J. Reynolds, Assistant Comptroller, and Percy S. Young, Vice-President in Charge of Finance.

Q. It is attested by both of those men whose names you have just mentioned?

A. That is correct.

Q. Will you please indicate the page in that report setting forth the information which you have referred to?

A. This is outlined in considerable detail on page

28-A and 28-B. It is probably all taken from those two pages; but I will check that.

MR. McALLISTER: Mr. Examiner, the statement submitted with the report and identified by the witness as pages 28-A and 28-B are offered by reference, and I ask that they be received in evidence.

EXAMINER SPENCER: I think it would be better to have the witness read them. Some of the other parties do not know what they are, and neither do I.

MR. PAXSON: Let me understand just what is going on. Are you offering something in evidence?

MR. McALLISTER: I offered pages 28-A and 28-B of the annual report of Public Service Electric and Gas Company and I ask that they be received in evidence.

MR. PAXSON: Objected to as mere hearsay and not binding upon either of these parties.

MR. AUTENRIETH: I join in the objection.

EXAMINER SPENCER: That is the report of the Public Service Electric and Gas Company. What does it purport to show generally?

MR. McALLISTER: It purports to show the results of the operations and transactions to which the witness was referring, upon which he based the statement that he just made. It is set out there in detail.

Mr. Examiner, the annual reports of this character submitted by an operating utility are reports based upon information currently maintained under order of the Commission and currently supplied at certain stated periods to the Commission. Reports of that

character are entitled to admission as official documents of the Commission when on file here. They are available to the public; they are available to those participating in this case, as well as any others for examination.

EXAMINER SPENCER: The Examiner recognizes that fact. The only question is whether it is pertinent to this particular inquiry. That is the basis of the objection. That is why I wanted it read. I can then determine whether or not it is. As I understand from the former testimony, this is offered for the purpose of tieing in all of the public utilities in that area, including the Jersey Central.

THE WITNESS: Which are physically interconnected and are interchanging energy.

EXAMINER SPENCER: And that evidence contained in that report bears upon that point?

THE WITNESS: Yes, sir.

MR. McALLISTER: It not only bears upon it; but this report that is made makes reference to this system interchange of related and interrelated companies to show how that operation on the whole does affect it.

MR. PAXSON: If the Commission please, I conceive this would certainly be admissible if the Public Service Electric and Gas Company were a party respondent. It would be an admission against interest. I don't know yet what it contains or whether it makes any reference to Jersey Central Power and Light. If there are any preconceived notions or conceptions or misconceptions which they put in a report, I contend it is not binding on the parties respondent and in no way fixes the status of the Jersey Central Power and

Light Company. We all know how these reports are prepared. I have seen many of them, and I have seen many misstatements of conclusions. I don't know that there has been a misstatement of fact; but they are put in for an entirely different purpose. This report is not made to fix the status of anybody and should not be admitted in evidence to establish it.

MR. McALLISTER: Of course, Mr. Examiner, that is argument. What is stated as facts from their records as a result of this operation and reported to this Commission under oath certainly is entitled to credence and consideration over an objection based upon surmise and generalities which have no real basis or foundation as an objection to particular reports which are filed here with the Commission in response to the requirements of the Commission that these particular matters be kept as records currently. And those records filed with the Commission show the results of operations during each current year. They are akin to book records made at the time the transactions took place. They are not compiled at the end of a year from a survey of the records but they are daily and monthly records that are kept. The requirements are that they be shown by months, and so on. When they are kept up in that shape, kept currently and maintained as the operating records of the company, they have a basis for their reports to the State Commissions, they have a basis for their reports to the Federal Power Commission, and they have always been relied upon not only by this Commission but by other Commissions.

When they are kept in accordance with the regulations of and as required by orders of the Commission, an objection that says they are purely hearsay fails to give consideration to the nature of the orders and

reports and the purpose of them, and the consideration which has been given to them by the Commission and by the Courts.

EXAMINER SPENCER: Mr. McAllister, let me ask you if you are going to offer any further reports during the course of the hearing and, if so, whether you know what those reports will be.

MR. McALLISTER: I cannot tell you at this time, Mr. Examiner, whether I shall offer any more reports or not. We expect to do so, Mr. Examiner, but at this time I cannot identify them.

EXAMINER SPENCER: The objection is overruled. Let it be admitted by reference.

MR. PAXSON: An exception, please.

EXAMINER SPENCER: An exception is noted for the Jersey Central Power and Light Company and the New Jersey Power and Light Company.

(The document above referred to was received in evidence by reference.)

THE WITNESS: On December 7, 1937, between five and six P. M. this company experienced its annual system peak.

BY MR. PAXSON:

Q. Which company?

A. Public Service Electric & Gas Company.

BY MR. McALLISTER:

Q. Mr. Grimsley, the statement you just made is a fact reported or shown in that report, isn't it?

A. Absolutely.

Q. On those pages to which you made reference?

A. That is correct.

On December 7, 1937, between 5 and 6 P. M. this

company experienced its annual system peak. This peak amounted to 551,900 kilowatts and included the power demand of its own ultimate consumers, deliveries to small municipal systems for resale and approximately 100 kilowatts supplied to Jersey Central Power and Light Company at Wrightstown and Lisbon.

Q. Those facts which you just stated are also shown on these pages?

A. If not, it is in the other exhibits. It will take me a little time to look for it.

The data that I now propose to use are shown on page 22 of this report.

Q. That is shown on page 22 of the report, you say?

A. That is correct—which I am going to use now.

Q. Will you please proceed, Mr. Grimsley?

A. This peak amounted to 551,900 kilowatts and included the power demand of its own ultimate consumers, deliveries to small municipal systems for resale and approximately 100 kilowatts supplied to Jersey Central Power and Light Company at Wrightstown and Lisbon.

The plant capability of this company is 684,500 kilowatts and its reserve requirements as a member of the pool are 44,000 kilowatts spinning reserve and 24,000 kilowatts cold reserve, or a total reserve capacity of 68,000 kilowatts. It appears, therefore, that this company had available in its own plants a generating capacity in excess of its annual system peak in 1937 plus the required reserves. Actually the annual system peak of Public Service Electric and Gas Company was supplied by 471,000 kilowatts generated in its own plants, 32,000 kilowatts supplied by Philadelphia Electric Company, 33,000 kilowatts by Pennsylvania Power and Light Company, 9,000 kilowatts supplied by Jersey Central Power and Light Company from its South Amboy plant, 2,000 kilowatts supplied by Staten Island Edison Corporation, and 5,000 kilowatts by other utilities. For economic and operating reasons Pub-

lic Service Electric and Gas Company was receiving a total of 80,000 kilowatts over its interconnections with other utilities at the time of its system peak. The delivery of 9,000 kilowatts by Jersey Central Power and Light Company to Mechanic Street at that time has had a distinct effect on the amount of energy which Public Service Electric and Gas Company was obtaining from Pennsylvania and New York.

BY MR. PAXSON:

Q. Is that shown in the reports, that it had a distinct effect, or are you giving your opinion?

A. I think that is a matter of clear common understanding.

Q. It is your opinion? I want to know whether you are giving an opinion or facts.

BY MR. McALLISTER:

Q. The statement, Mr. Grimsley, is based upon your conclusion reached from a consideration of the facts which you stated previously? Is that correct?

A. Yes.

Q. And those facts which you have just stated for the record are facts which are reported to the Commission in this annual report of the Public Service Electric and Gas Company to which you referred?

A. That is correct.

Q. And your conclusions are your conclusions as an engineer based upon your knowledge of these conditions and the basic data and facts which are reported to the Commission by these reports which we have introduced in this case, pages 28-A and 28-B, to which you made reference, and page 22 of that report?

A. That is correct.

Q. Are these inter-connections which you have been describing those interconnections shown on Exhibit No. 1?

A. They are.

Q. Will you please describe the nature of this system which you have been discussing?

A. To summarize, the physical interconnections, the contractual relations and the interchanges of power between the several utilities operating in the areas shown on Exhibit No. 1, together with the relative location of their service areas, transmission lines, power plants and substations, make Jersey Central Power and Light Company an integral engineering and economic part of the large and extensive system furnishing electric service in New Jersey and parts of the adjoining states. The several companies composing this system exist as separate corporate entities.

In the distribution of energy to the ultimate consumers and with regard to many other matters they are independent of each other. But in the operation of their power plants and transmission lines and in the amounts, time and location of their power interchanges they are most closely interrelated. These conditions govern the interchange of power between Jersey Central Power and Light Company and the utilities with which it is interconnected. All the energy which Jersey Central Power and Light Company delivers to or receives from other utilities exercises a distinct influence over the flow of energy across the boundaries of New Jersey. Some of this energy is actually transferred across state lines before it reaches the ultimate consumers.

Q. Have you made a study of the physical layout and characteristics of the Mechanic Street Substation?

A. I have.

Q. Located at Perth Amboy and belonging to the property of the Public Service Electric & Gas Company?

A. That is correct.

Q. Did you examine that substation in detail and in person?

A. I did, on two or more occasions.

Q. Did you prepare or have prepared a diagram of the Mechanic Street Substation?

A. I did.

Q. Is the exhibit which I have just handed to you the diagram showing the facilities of that substation?

A. It is.

BY EXAMINER SPENCER:

Q. Which substation is that?

A. Mechanic Street Substation of Public Service Electric and Gas Company at Perth Amboy.

BY MR. McALLISTER:

Q. Mr. Grimsley, was this exhibit prepared from information which you obtained in the field or what was the source of the information upon which you relied in the preparation of this exhibit?

A. We had several drawings of this substation and from time to time there were changes made, and we took a copy like this from their system report, form 64, for 1937, together with such other drawings as had been furnished from time to time, and went to the substation and checked up with two engineers from the Public Service Company and found this to be correct; and it is what is known as a one line diagram.

Q. What do you mean by a one line diagram?

A. Instead of a three-way circuit having three circuits there is one line to show, as here. The bus here is made of three ducts reduced to one line. It simplifies the diagram.

MR. McALLISTER: I offer the exhibit showing the layout at Mechanic Street Substation as Commission's Exhibit No. 8 and I ask that it be received in evidence.

MR. PAXSON: No objection.

EXAMINER SPENCER: It will be received and marked Commission's Exhibit No. 8.

(*The document above referred to was received in evidence and marked Commission's Exhibit No. 8.*)

(BY MR. McALLISTER):

Q. Mr. Grimsley, will you describe the relative position of the Mechanic Street Substation to the Public Service Electric and Gas Company system and the various transmission lines entering that substation?

A. Mechanic Street substation is located in the City of Perth Amboy, New Jersey and serves as a source of power for the electric load in and around the city. The substation is connected by a 26.4 kv. line with the South Amboy power plant of Jersey Central Power and Light Company.

Over this line Jersey Central delivered to Public Service Electric and Gas Company 55 million kilowatt hours in 1937.

The Mechanic Street Substation is also connected by a 26.4 line with the Atlantic Substation of Staten Island Edison Corporation. Over this line some 3 million kilowatt hours were delivered to Staten Island, and nearly the same amount received from Staten Island.

Q. During what year was that?

A. 1937.

Q. Will you proceed, please?

A. By other 26.4 kv. lines the Mechanic Street Substation is connected with the Carteret, Keasby and Metuchen substations. In the Mechanic Street Substation all these lines are connected to a 26.4 bus through an appropriate switching and controlling equipment.

Directly by this bus is served one of the major electric customers in the area, the General Cable Corporation. Other customers are served from a 4 kv. bus which is

connected through two banks of transformers to the main bus of the station.

Q. When you refer to other customers there do you have reference to other local customers?

A. That is correct.

Q. Mr. Grimsley, have you prepared a diagram showing relative the locations of the various substations to which you have just referred which are connected with the Mechanic Street Substation?

A. I have.

Q. Is that the diagram which I have just handed to you which you have identified?

A. It is.

Q. What was the source of the information from which you prepared this diagram?

A. It was taken from the records of the Commission which were supplied by the Public Service Electric and Gas Corporation.

Q. When you say reports and records do you have reference to the maps, diagrams and reports as contained in their annual reports?

A. That is correct.

MR. McALLISTER: Mr. Examiner, I offer the diagram in evidence as Commission's Exhibit No. 9.

EXAMINER SPENCER: Is there any objection?

MR. PAXSON: No objection.

EXAMINER SPENCER: It will be received in evidence and marked Commission's Exhibit No. 9.

(The document above referred to was received in evidence and marked Commission's Exhibit No. 9.)

BY MR. McALLISTER:

Q. Mr. Grimsley, have you also had prepared a map

showing the northern zone of the Public Service Electric and Gas Company?

A. Yes, sir.

Q. What was the source of the information from which you prepared that exhibit?

A. It was prepared from the records filed with this Commission by the Public Service Electric and Gas Company as contained in their report.

Q. As contained in their annual report?

A. Yes, sir.

MR. McALLISTER: Mr. Examiner, I offer the exhibit in evidence as Commission's Exhibit No. 10 and ask that it be received.

EXAMINER SPENCER: Is there any objection?

MR. PAXSON: No objection.

EXAMINER SPENCER: It will be received in evidence and will be marked Commission's Exhibit No. 10.

(The document above referred to was received in evidence and marked Commission's Exhibit No. 10.)

BY MR. McALLISTER:

Q. Mr. Grimsley, by reference to Commission's Exhibit No. 9 will you please describe the Central Division of Public Service Electric and Gas Company, including the operation of the Mechanic Street Substation?

A. The Central Division consists of the Metuchen, Carteret, Tremley, Linden, Rahway, Keasby and Mechanic Street Substations interconnected among themselves by 26.4 kv. lines. Each of these substations receives its power supply under normal operating conditions from either the Mechanic Street substation, supplied in turn by Jersey Central, or the Metuchen substation, or both.

The Metuchen substation is connected through transformers and appropriate switching equipment to a 132 kv. line interconnecting the Richmond plant of the Philadelphia Electric Company and the Roseland Substation, and the Essex Power Plant of the Public Service Electric and Gas Company.

Q. Mr. Grimsley, will you please state the source of the information which you related in answer to the last question?

A. It is taken from the power system statement for the year ended December 31, 1937.

Q. As filed with the Federal Power Commission on July 21, 1938?

A. That is correct.

Q. Mr. Grimsley, you stated that you had examined in detail the layout at the Mechanic Street Substation at Perth Amboy, New Jersey?

A. Yes, sir.

Q. Did you at the same time study the log sheet showing the instrument readings at certain intervals as reported in the substation?

A. I did.

Q. Or as kept in that substation?

A. Yes, sir.

Q. What do those log sheets show?

MR. PAXSON: Just a moment, please. For what period of time and when?

THE WITNESS: I was just going to give you that, Mr. Paxson.

MR. PAXSON: In other words, I do not want any generalization about log sheets for four or five years which represent a conclusion which might be sound or which might be subject to question.

THE WITNESS: The period we studied in this connection was January, 1937 to September, 1938.

MR. PAXSON: If the Commission please, I object to any testimony as to anything which may have occurred subsequent to March 14, 1938, which is the date fixed by this Commission in its investigation, which is to determine whether or not a certain transaction for the acquisition of certain shares of stock of Jersey Central Power & Light by the New Jersey Power and Light Company was proper or improper. I submit nothing that has happened subsequent to March 14, 1938 has any relevancy in this proceeding to determine the validity or invalidity of that transaction.

MR. McALLISTER: The course of events which exist over a period of time leading up to and continuing after a particular transaction are pertinent as indicating the condition which existed at the time.

There is no exception that I know of to that established rule in showing what is likely to be the condition at a particular time when there is no reporting device to set forth instantaneously what was the condition at the instant that the transaction might have been completed. In other words, if you give full force and effect to what Mr. Paxson has to say we must determine when this transfer of stock took place and at that very time then it must be said that there were energy transactions of a character which would make the Jersey Central Power and Light Company a utility amenable to the jurisdiction of this Commission. In other words, it results in an absurd result when you attempt to give force and effect to the principle that he has undertaken to establish as a basis for an objection to this line of testimony.

EXAMINER SPENCER: The Examiner recognizes the fact that any transaction subsequent to the transfer of the stock does not directly bear upon the

question of public utility status of this corporation. Nevertheless, transactions subsequent to that period, as well as those prior to that period, I feel would have a bearing upon the question.

I shall overrule the objection. The witness may answer the question. The respondent may have an exception.

You may proceed, Mr. Grimsley.

BY MR. McALLISTER:

Q. Mr. Grimsley, I think the question propounded to you was: what did those log sheets show? I am referring to the log sheets which you said you examined at the Mechanic Street Substation, the log sheets of operations at Mechanic Street Substation.

MR. PAXSON: Do you have the log sheets?

That is a long period of time—to remember every day. I don't think any man connected with Public Service could tell from memory, or any man from any of these other companies. I don't want conclusions as to what they show.

MR. McALLISTER: Mr. Paxson, if you will just bear with us for a moment I will say we are not relying upon any memory.

MR. PAXSON: All right. But I just don't like general questioning to bring out general conclusions.

THE WITNESS: These log sheets show the flow of electric power over the several lines mentioned previously. This flow is recorded in kilowatts for some of the lines and in k. v. a. or amperes for the others. Records are taken every half-hour, except for the period from 12 midnight to 6:00 a. m., during which time the readings are taken once each hour.

BY MR. McALLISTER:

Q. By that, Mr. Grimsley, you mean the log sheets recording these readings were taken during that period every half-hour, and during the period from midnight until six o'clock in the morning the log sheets record readings taken every hour?

A. Well, it is the duty of the substation operators to take from these instruments a record on these log sheets, what the log sheets read. It is a record, therefore, of the substation operation.

Q. From the log sheets which you examined, Mr. Grimsley, did you extract information showing the flow of energy through Mechanic Street Substation?

A. Yes, sir. I have copied from the log sheets 150 different readings from among those taken during the last 14 months. For each of these readings there was recorded an inflow of energy from Jersey Central Power and Light Company and a simultaneous outflow of energy to Staten Island Edison Corporation.

Q. Mr. Grimsley, I hand you an exhibit and ask you to examine it and state whether that is the statement recording the instrument readings which you took from the log sheets at the Mechanic Street substation and to which you just referred.

A. This is the copy of the readings taken from the log sheets.

Q. Was this statement prepared by you and under your direction while you were making the investigation of the Mechanic Street Substation?

A. In part by me but principally by two assistants under my supervision and direction.

MR. McALLISTER: Mr. Examiner, I offer in evidence the statement identified by the witness as Commission's Exhibit No. 11.

MR. PAXSON: I would like to look at it for just a moment.

EXAMINER SPENCER: You may do so.

MR. PAXSON: No objection, except the readings subsequent to March 14, 1938, so far as they are concerned, and subject to checking for accuracy.

EXAMINER SPENCER: The statement will be received in evidence as Commission's Exhibit No. 11.

(The document above referred to was received in evidence and marked Commission's Exhibit No. 11.)

BY MR. McALLISTER:

Q. Mr. Grimsley, what use have you made of the information shown on Exhibit No. 11 in determining the flow of energy through the Mechanic Street Substation?

A. I first reduced all original instrument readings to a uniform basis of kilowatts, then determined the excess of the power supplied from Jersey Central to Mechanic Street Substation over that delivered to the 4 kv. bus, the General Cable Corporation and the Staten Island Edison Corporation. For each of the 150 readings there was found to be an appreciable excess of power.

Q. Mr. Grimsley, have you prepared an exhibit to show the results which you have indicated, as a result of your study?

A. I have.

Q. I show you an exhibit, Mr. Grimsley, and ask you to state whether that is the compilation to which you refer.

A. It is.

MR. McALLISTER: Mr. Examiner, I offer the statement which has just been identified by the witness as Commission's Exhibit No. 12.

I am perfectly willing to wait until they have had an opportunity to check it.

MR. PAXSON: No objection, except as to the facts shown subsequent to March 14, 1938 and subject to checking as to accuracy.

EXAMINER SPENCER: The statement will be received in evidence and will be marked Commission's Exhibit No. 12.

(The document above referred to was received in evidence and marked Commission's Exhibit No. 12.)

BY MR. McALLISTER:

Q. Mr. Grimsley, will you please explain Commission's Exhibit No. 12 briefly to show just what you have done in relating the information shown on Exhibit No. 11 to that information which you report on Exhibit No. 12?

A. The basic information appears on Exhibit No. 11. Then it is arranged here by dates, hours and—

Q. To which exhibit are you referring now?

A. I am now referring to Exhibit No. 12. It is arranged here by dates, hours, and the amount of power received from Jersey Central in the next column, which is supported by the log sheet. The next column to the right is the local load, and that is the load that is supplied from the 4 k. v. bus. That on the log sheets is recorded as k. v. a. and on Exhibit No. 12 it is converted to kilowatts.

In the next column to the right the General Cable load is shown, which the log sheets reflect as ammeter readings. They, in turn, were converted to kilowatts.

The next column to the right, the Staten Island Edison Corporation, is recorded in kilowatts.

The total of these three columns represents the total load supplied by the Mechanic Street Station in kilowatts.

This total is then subtracted from the amount of power received from Jersey Central for the period.

The next and last column to the right shows surplus power at Mechanic Street station expressed in kilowatts. That was carried out through the 150 tabulations shown in Exhibit No. 12.

Q. The basic readings shown on Exhibit No. 12 are the same readings which are shown on Exhibit No. 11?

A. That is correct.

Q. The total information on Exhibit No. 11 was obtained by you or under your direction directly from the log sheets at Mechanic Street substation?

A. Well, they were maintained in an office located near the substation. They were the company records of the substation.

Q. They were the Mechanic Street substation records as kept by officials of the company?

A. That is correct.

Q. As I understand your testimony in relation to Exhibit No. 12, you have said that having related the various instrument readings to kilowatts you determined the total local load at the Mechanic Street substation, that is, the local load through the transformer bank, the load going to the General Cable and the load going to Staten Island, Edison Corporation, and having totaled those amounts, as the local load at Mechanic Street you arrived at the surplus power shown in the last column on Exhibit No. 12, which is the difference between the energy coming in from Jersey Central Power and Light Company and the local load as shown on Exhibit No. 12?

A. That is correct.

Q. And that computation or calculation was carried out for each of the 150 readings which you report on Exhibits Nos. 11 and 12?

A. That is correct.

EXAMINER SPENCER: Mr. McAllister, will

you be able to finish with this witness this afternoon?

MR. McALLISTER: No, Mr. Examiner; I will not be able to finish with this witness. It will require probably another half-day.

EXAMINER SPENCER: Have you other witnesses?

MR. McALLISTER: I have, Mr. Examiner. But I cannot put them on just at this point.

EXAMINER SPENCER: I assume you will have a number of witnesses, Mr. Paxson?

MR. PAXSON: We will have a few.

EXAMINER SPENCER: At this time we will adjourn until ten o'clock tomorrow morning.

(Whereupon, at 4:30 o'clock p. m., an adjournment was taken until Wednesday, September 28, 1938, at 10:00 o'clock a. m.)

Room 1201, Hurley Wright Bldg., Washington, D. C., Wednesday, September 28, 1938.

The above-entitled matter came on for further hearing, pursuant to adjournment, at 10:00 o'clock a. m.

Before:

Carroll B. Spencer, Trial Examiner.

Appearances:

As heretofore noted.

PROCEEDINGS

EXAMINER SPENCER: Gentlemen, the hearing will now be resumed.

You may proceed, Mr. McAlister.

A. H. GRIMSLEY,

resumed the witness stand and, having been previously duly sworn, testified on behalf of the Commission as follows:

Direct Examination (Resumed)

BY MR. McALLISTER:

Q. Mr. Grimsley, at the time we adjourned yesterday afternoon you had just completed the testimony regarding the exhibits numbered 11 and 12. Will you please refer to Exhibit No. 12?

A. Yes; I have it.

Q. I call your attention to the last column on the right-hand side of that exhibit and I will ask you to state briefly, for the record, just what that column shows so that we can tie it in with your prior testimony before we proceed further.

A. It represents that amount of energy remaining after deducting from that received from Jersey Central Power and Light the Mechanic Street Substation requirements.

Q. In other words, Mr. Grimsley, that represents the surplus?

A. Energy over and above the local requirements for that period.

Q. Considering the energy coming to Mechanic Street Substation from Jersey Central Power and Light Company that is the total available at that point for the satisfaction of this load at Mechanic Street?

A. That is correct.

Q. Now, Mr. Grimsley, what becomes of this excess or surplus in the last column to the right on Exhibit No.

12? I mean the surplus power to which you have just referred.

A. This surplus energy flows out and away from Mechanic Street Substation over the several lines connected to it to supply other loads in the Central Division of the Public Service Electric and Gas Company.

Q. Those lines to which you have reference are those lines which you show in Exhibit No. 9, are they not?

A. Well, it is all of the lines shown on Exhibit No. 9 excepting that one leading to Atlantic Staten Island Substation, because that has already been taken into account, that is, delivery. So that flows out over the other remaining four lines.

Q. Shown on Exhibit No. 9?

A. Shown on Exhibit No. 9. I might designate that by numbers, if you like.

Q. You might indicate that, Mr. Grimsley. Then there can be no question about it.

A. Out over line designated B-184, line N-196, line A-183, and line Q-199.

Q. Have you made any determination to ascertain the quantity and direction of the flow of energy away from Mechanic Street over each of the lines connecting the substation with the other substations in the Central Division of the Public Service Electric and Gas Company?

A. Yes; I have.

Q. Will you please describe in what manner you made that determination?

A. I have taken 24 readings from among the 150 shown on Exhibit No. 11 and obtained for the same days and hours all of the substation loads in the Central Division.

Q. That is the Central Division of the Public Service Electric and Gas Company?

A. That is correct. That is the only Central Division I have referred to so far and will hereafter refer to, that

is, of the Public Service Electric and Gas Company.

Q. Mr. Grimsley, I show you an exhibit and I will ask you if that is the exhibit which you have prepared showing the 24 readings to which you have just referred?

A. This is the one; yes, sir.

Q. Now, Mr. Grimsley, by reference to the exhibit which you have before you will you please indicate the source of the information which you record on that statement?

A. The information, up to and including the column under the caption "Energy Delivered to Staten Island Edison Corporation," is taken from Exhibit No. 11.

Q. Before you go any further, Mr. Grimsley, you say up to and including that column. What do you mean?

A. I mean reading from left to right.

Q. Reading the headings there of the month, day and hour, energy obtained from Jersey Central Power and Light Company; the next column, Mechanic Street Substation, local load, and general cable company load, and that following column, energy delivered to Staten Island Edison Corporation—that much of the information which you show is taken from Exhibit No. 11?

A. That is correct.

Q. Now, with respect to the balance of the information on that exhibit, will you please state the source of that information?

A. That information was supplied by the Public Service Electric and Gas Company to me in Newark. We were there studying the situation.

BY MR. PAXSON:

Q. Just a moment, please. Did you study the records yourself? Were the records supplied, and did you get these data from the records or did they just send you this?

MR. McALLISTER: If you will just let the finish with the witness it will appear how it was obtained

and you will have ample opportunity for cross-examination to get further details regarding it.

MR. PAXSON: I do not like to interfere with the examination of a witness, but sometimes in the interest of clarity it is helpful. I may or may not have some objection to the introduction of this exhibit. I do that only to see whether I do have any objection. If you bring that out it is all right with me.

I presume you are going to offer that, are you not?

MR. McALLISTER: I am.

THE WITNESS: This statement was handed to me by the man in charge of such records in that department, a copy of which I have here.

BY MR. McALLISTER:

Q. In other words, Mr. Grimsley, the responsible officials of the Public Service Electric and Gas Company furnished the inforination to you which you showed here?

A. Yes, sir.

Q. Now, will you please state for the record just what request was made on the Public Service Electric and Gas Company and how they came to furnish this information here? In other words, you made a request on them for this information with respect to 24 readings which you show on this statement? Isn't that true?

A. That is true. I requested from them all other loads supplied to the Central Division for these time periods, showing the name of the substation and the record of the load at each substation for the period.

Q. And you furnished them the information contained in the first two or three columns, that is, the month, day, and hour, as shown on the lefthand side of this statement, and you requested that they for those periods or those

times supply you the loads at these other designated points which you have indicated to them was necessary or desirable for your use in making this study?

A. That is correct.

MR. McALLISTER: Mr. Examiner, at this time I wish to offer the statement referred to and identified by the witness merely for the purpose of identification, and I will ask that it be marked. When I have had an opportunity through another witness to establish the correctness and the verity of the additional information on this exhibit, I will offer it in evidence at that time.

EXAMINER SPENCER: It may be marked for identification.

MR. McALLISTER: I ask that it be marked for identification as Commission's Exhibit No. 13.

EXAMINER SPENCER: It will be marked Commission's Exhibit No. 13 for identification.

(The document above referred to was marked for identification Commission's Exhibit No. 13.)

BY MR. McALLISTER:

Q. In making the determination to ascertain the quantity and flow of energy from Mechanic Street in connection with this surplus to which you were referring, Mr. Grimsley, what other information did you obtain to enable you to make that determination?

A. I also obtained from the Public Service Electric and Gas Company the power factors of the loads under ordinary heavy load conditions and the impedances of the lines connecting the several substations.

Q. When you refer to the several substations you are referring to those substations shown on Exhibit 9, are you not?

A. That is correct.

Q. I mean shown on Exhibit No. 9 except the substation shown as Mechanic Street Substation.

A. That is correct.

Q. Now, Mr. Grimsley, I show you a statement which is described as power factors for substations, Central Division, at time of ordinary heavy load condition, and I will ask you if that is the information which you obtained from Public Service Electric and Gas Company to which you have just referred?

A. These are the data. This is a copy of the data we secured, that is, with reference to the power factor.

MR. McALLISTER: Mr. Examiner, I will ask that the statement identified by the witness be marked for identification and indicated as Commission's Exhibit No. 14.

EXAMINER SPENCER: Let the statement be marked for identification as Commission's Exhibit No. 14.

(The document above referred to was marked for identification Commission's Exhibit No. 14.)

BY MR. McALLISTER:

Q. Mr. Grimsley, I show you a further statement, which is headed "Line Impedances in Central Division," and I will ask you if that is the information to which you have just referred in your last statement as having been obtained from the Public Service Electric and Gas Company?

A. This is a typed copy of the information furnished and it has been checked with the original.

MR. McALLISTER: Likewise, Mr. Examiner, with respect to that exhibit, I ask that it be marked for identification as Commission's Exhibit No. 15.

EXAMINER SPENCER: It may be marked for identification Commission's Exhibit No. 15.

(The document above referred to was marked for identification Commission's Exhibit No. 15.)

BY MR. McALLISTER:

Q. Mr. Grimsley, will you please proceed with an explanation of the methods employed by you in determining the quantity and direction of flow in connection with the excess energy shown on Exhibit No. 12, to which you have been referring?

MR. PAXSON: Are you referring to Exhibit No. 12 or Exhibit No. 13, Mr. McAllister?

MR. McALLISTER: Exhibit No. 12.

MR. PAXSON: Not one of these exhibits offered this morning?

MR. McALLISTER: That is the exhibit that is in evidence.

THE WITNESS: Employing well known methods commonly used by engineers in calculating the flow of energy in each branch of a network, I have determined that for each of these 24 cases the excess power received from Jersey Central Power and Light Company at Mechanic Street Substation over and above the local requirements flowed away from this substation in all lines connected to it.

BY MR. McALLISTER:

Q. Mr. Grimsley, have you prepared a statement showing the results of your determination as described by you?

A. I have.

Q. Is that the statement which I have just handed to you which sets forth that determination?

A. That is correct.

MR. McALLISTER: Mr. Examiner, I ask that this document also be marked for identification, as Commission's Exhibit No. 16.

EXAMINER SPENCER: Let it be so marked as Commission's Exhibit No. 16 for identification.

(The document above referred to was marked for identification Commission's Exhibit No. 16.)

BY MR. McALLISTER:

Q. Mr. Grimsley, will you please refer to the exhibit which has just been identified as Commission's Exhibit No. 16, and state for the record what it shows?

A. It shows the amount of surplus energy for the period that flowed to each of the four respective lines shown on Exhibit No. 9.

Q. In what direction?

A. Out and away from Mechanic Street Substation.

Q. Will you please indicate on the exhibit where that information appears, Mr. Grimsley?

A. "Disposition of remainder calculated transmitted to Metuchen, Carteret and Keasby." That is the caption under which the amounts are shown in the columns as transmitted over each line.

Q. What columns?

A. Columns 6, 7 and 8.

Q. And Column 9 shows what?

A. That there was transmitted or flowed out and away from Mechanic Street Substation this balance that is shown on Exhibit No. 12.

Q. That is the total of Columns 6, 7 and 8, is it not?

A. That is correct.

Q. In other words, do you show in Column 3 the quantity of power supplied by Jersey Central Power and Light Company at the time indicated in Columns 1 and 2? Is that correct?

A. That is correct.

Q. And in Column 4 you show the local load at Mechanic Street Substation?

A. That is correct,—including the Staten Island Edison Corporation load.

Q. In Column 5 you show the difference between the quantity received from Jersey Central Power and Light Company and the local load at Mechanic Street Substation, including the quantity going to Staten Island Edison Corporation?

A. That is correct.

Q. The difference between those two quantities is shown in Column 5?

A. That is correct.

Q. Then, in Columns 6, 7 and 8 you show the individual loads at Metuchen, Carteret—I mean the loads going to Metuchen, Carteret and Keasby?

A. That is correct.

Q. And you state those individual loads in Columns 6, 7 and 8?

A. That is correct.

Q. And the total of the three in Column 9?

A. Yes, sir.

Q. That total which you show going out over the various lines to the load at Metuchen, Carteret and Keasby is the total surplus remaining at Mechanic Street Substation?

A. Yes.

Q. It is the excess at Mechanic Street Substation remaining over and above the local requirements at that point taken out of the total received from the Jersey Central Power and Light Company?

A. That is correct.

Q. Putting it in another way, Mr. Grimsley, what you show on this exhibit is that a certain given quantity comes from Jersey Central Power and Light Company?

A. That is correct.

Q. You then satisfy the local needs at Mechanic Street Substation, including the quantity being delivered to Staten Island Edison Corporation, out of that total received from Jersey Central Power and Light Company?

A. That is correct.

Q. And then the balance remaining by your determination and you show the quantity going out over the network on the available lines which you have identified on Exhibit No. 9 as lines B-184, N-196, A-183, and Q-199?

A. That is correct.

Q. And they are those quantities you show in the three columns, headed 6, 7 and 8?

A. That is correct.

Q. And that shows the energy is flowing out of and away from Mechanic Street on all of those four lines?

A. That is true.

Q. Mr. Grimsley, what do you show in the last column on Exhibit No. 16?

A. That was the total requirement in the network studied known as the Central Divisions, which data were furnished by the Public Service Electric and Gas Company.

Q. Mr. Grimsley, when you say the information shown in the last column on Exhibit No. 16 was information furnished by the Public Service Electric and Gas Company, what you meant was that taking into consideration the load at Mechanic Street Substation as shown on Exhibit No. 13, and considering the loads which were furnished by the Public Service Electric and Gas Company for the Carteret Substation, Keasby, Rahway, Linden, Trenley, and Metuchen, also shown on Exhibit No. 13, the total of those loads gives you the total of the requirement which you show in Column 10 on Exhibit No. 16?

A. That is correct. In other words, we took the data

from the log sheets for the Mechanic Street load and other loads referred to were supplied by the Public Service Electric and Gas Company. The sum of those represents the total shown in Column 10.

Q. What conclusions do you arrive at from a consideration of the determination which you made through the computations on Exhibit No. 16, Mr. Grimsley?

A. This determination precludes the possibility of any power other than that supplied by the Jersey Central Power and Light Company to Mechanic Street Substation being transmitted to the Staten Island Edison Corporation at the time shown on the exhibit.

Q. In other words, Mr. Grimsley, with energy flowing out over all of the lines which connect Mechanic Street Substation with another source of supply there can be no incoming flow of energy at that time?

A. That is correct. That is very definitely established there.

Q. What method was employed in selecting the 24 cases which you show on Exhibit No. 16?

A. These were selected to represent typical conditions for various seasons of the year and various hours of the day and are in no way distinct from most of the other 150 readings shown on Exhibit No. 11.

Q. And Exhibit No. 12 also? Is that correct?

A. Yes, sir.

Q. Will you please proceed, Mr. Grimsley?

A. At the time of selecting the 24 cases we had no information in regard to the load in the Central Division except that of Mechanic Street Substation. These data were secured later.

Q. By that you mean, do you not, Mr. Grimsley, that no predetermination was made as to the possible answer which would be obtained when those loads were had?

A. That is correct. We took the 24 readings from the 150; we selected them, and then we asked for the

load data later. We brought that back and made those computations here. We did not know what the answer would be.

Q. The 24 cases which you selected are included among the 150 shown on Exhibits Nos. 11 and 12?

A. That is right. They were taken from them.

Q. And the 24 cases to which you referred are also shown on Exhibits 13 and 16? The same identical readings are shown on Exhibits 13 and 16, are they not? When I say readings, I mean the readings for the certain month, day and hour as shown on Exhibit No. 13 are those readings as shown on Exhibit No. 16?

A. That is correct.

Q. Mr. Grimsley, at the outset did you select just these 24 cases or did you select others in addition which were later eliminated?

A. I would have to check the original data. I do not believe we asked for any others than these 24.

Q. Will you please check it, Mr. Grimsley? And when you have done that, will you please state for the record whether or not you asked for any additional beyond the 24?

A. That is correct. These 24 cases were the only ones on which we asked for the load in the network outside of Mechanic Street, which we had calculated.

Q. Mr. Grimsley, on Exhibit No. 16 there is a typewritten note opposite certain readings at the top of the statement there, and opposite the reading for January 26, 1937. Will you please explain the significance of that note and the reason for its inclusion on the exhibit?

A. It is very obvious there that the total network requirement was less for the given periods than that which was received from the Jersey Central Power and Light Company for the same periods. So there was a balance of energy remaining from that which was received from Jersey Central Power and Light Company and the needs

or requirements for the entire network there studied and under consideration.

Q. In other words, Mr. Grimsley, at 8:30 on January 26, 1937, you show the power inflow from Jersey Central Power and Light Company at Mechanic Street Substation as being 19,000 kilowatts?

A. That is correct. I might add there that we found many cases where the amount received was in excess of that.

Q. When you say in excess, Mr. Grimsley, you mean the amount flowing to Mechanic Street Substation from Jersey Central Power and Light Company?

A. That is correct.

Q. That power received from Jersey Central Power and Light Company would be utilized in supplying the load at Mechanic Street Substation which you show at 5470 kilowatts in Column 4?

A. That is correct.

Q. And the total remaining available to supply the balance of the network would then be 13,530 kilowatts, is that correct?

A. That is the remainder left for the load in the network.

Q. But the total in the network which you show in Column 10 includes both the load at Mechanic Street Substation and the load at the outlying substations which are shown in Exhibit No. 9?

A. That is correct.

Q. What becomes of the excess energy received from Jersey Central Power and Light Company at Mechanic Street Substation over and above the requirements at all of these substations which you show on Exhibit No. 9?

A. Well, it is very obvious it would move out over the main voltage lines, namely, 26.4 from Metuchen to other load areas.

Q. Would it be a proper statement to say that the in-

coming flow of energy from the Jersey Central Power and Light Company under these conditions which you show by the statement on Exhibit No. 16 supplied all of the requirements in that district, and more besides?

A. That is correct.

Q. What would be the reasonable conclusions from such a condition in relation to the origin of energy flowing from Mechanic Street Substation to Staten Island Edison Corporation at those times?

A. Unquestionably it could not come from any other place than the South Amboy Plant of Jersey Central Power and Light. It must necessarily come from there. It came from there, unquestionably.

Q. And that energy would flow over what facilities of Jersey Central Power and Light Company in reaching the Mechanic Street Substation?

A. There is an overhead transmission line leading direct from the South Amboy plant, two circuits, that is, two three-phase circuits, to the Raritan River south bank, and there it is taken by the Public Service Electric and Gas Company, through two submarine cables under the river over to Mechanic Street Substation. It is received there on the Mechanic Street Substation bus, and from there out over the line from the bus to Atlantic Substation of Staten Island Edison Corporation. It is a direct path.

MR. PAXSON: I move the last statement of the witness be stricken—a direct path. That it is a direct path is a conclusion. He has shown a bus bar; he has shown different circuits leading out. That it is a direct path is a conclusion only.

THE WITNESS: I call it.

EXAMINER SPENCER: Based upon the facts he testifies, he has in his opinion as an expert that would be a direct path.

THE WITNESS: That is correct.

BY MR. McALLISTER:

Q. Now, Mr. Grimsley, which of those facilities which you have described are facilities which are owned by Jersey Central Light and Power Company?

A. It is the overhead transmission line carrying two circuits, 26.4 k. v. from the South Amboy plant to the south bank of the Raritan River.

Q. From that point into the Mechanic Street Substation the transmission facilities are owned by whom?

A. Public Service.

Q. Public Service Electric and Gas Company?

A. Yes, sir; by the Public Service Electric and Gas Company.

Q. Mr. Grimsley, what conclusions may be reasonably drawn from your study of the 24 cases to which you have just been referring and with respect to the remaining cases shown on Exhibits 11 and 12?

A. Practically all remaining cases would show the same results. In all exceptions, if there be any exceptions, detailed studies would show definitely that a part of the energy delivered to Staten Island Edison Corporation at those times originated at South Amboy power plant of the Jersey Central Power and Light Company.

Q. Mr. Grimsley, you explained in some detail the circumstances and conditions under which energy flows from the Jersey Central Power and Light Company through Mechanic Street Substation to Staten Island Edison Corporation. Do you find any records showing a flow of energy in the reverse direction, from the Staten Island Edison Corporation to Mechanic Street, at times when simultaneous deliveries were made from Mechanic Street Substation to Jersey Central Power and Light Company?

A. Yes, sir.

Q. Where did you find those records, Mr. Grimsley?

A. At the Mechanic Street Substation.

Q. What was the nature of the records?

A. There on the log sheets.

Q. The readings were information reported on the log sheets maintained in connection with the operation of the Mechanic Street Substation? Is that correct?

A. That is correct.

Q. Mr. Grimsley, I show you a statement and ask you if that is the statement prepared from the records which you obtained relating to the operation of the Mechanic Street Substation?

A. It is.

MR. McALLISTER: Mr. Examiner, I offer in evidence at this time the statement identified by the witness, and I ask that it be received in evidence as Commission's Exhibit No. 17.

EXAMINER SPENCER: Is there any objection?

MR. PAXSON: Yes, Mr. Examiner; I have an objection to the introduction of this statement in evidence, except for two instances. Well, there is no exception at all. All of these instances occurred after March 14, 1938, and, consequently, whatever happened subsequent to that date which might or might not affect the status has nothing to do with this case and is not material. It is incompetent, irrelevant and immaterial.

EXAMINER SPENCER: Mr. McAllister, what bearing do you say this statement has on the case?

MR. McALLISTER: As I said before, Mr. Examiner, in connection with a similar objection, conditions showing a continuous condition of operation is a matter of information indicating a series of circumstances that is of evidentiary value to the Commission in determining what was the condition of operation and flow of energy at sundry and various times over these lines.

MR. PAXSON: If the Commission please, his first instance is April 3rd. He has not shown any continuous series of transactions prior to that date. Conceivably the situation had been changed completely. There is nothing to build up on this. I understand his argument yesterday was that having shown some other condition he wanted to show a chain of circumstances.

EXAMINER SPENCER: Respondent will be given an opportunity to show similar readings for prior dates.

MR. PAXSON: There may not be any. We are not asking for any opportunity to show it. That is his case. We are not conducting his case for him.

EXAMINER SPENCER: Any showing you would make would be for your own interest and not in the interest of Counsel for the Commission, of course.

The objection is overruled.

Let it be admitted over the objection of the attorney for respondent.

MR. PAXSON: I ask an exception.

EXAMINER SPENCER: An exception will be noted.

(The document above referred to was received in evidence and marked Commission's Exhibit No. 17.)

BY MR. McALLISTER:

Q. Mr. Grimsley, what use have you made of the information shown on Exhibit No. 17 in determining the flow of energy through Mechanic Street Substation under these conditions?

MR. PAXSON: Just a moment, please. I want it understood that my objection goes to each and every question put with reference to this exhibit.

EXAMINER SPENCER: All right.

MR. PAXSON: An exception all of the way through. Otherwise I would have to interrupt on each question.

EXAMINER SPENCER: The record will show attorney for respondent objects to each question relating to this particular exhibit; the objection is overruled and an exception is granted.

THE WITNESS: It shows during these periods that in the column under J. C. P. and L. —

BY MR. McALLISTER:

Q. What does that stand for?

A. Jersey Central Power and Light Company.

Q. Will you proceed, please?

A. It shows during these periods under that column energy flowed from Mechanic Street Substation to Jersey Central Power and Light.

In the next column, under "S. I. E. D.," which is Staten Island Edison Corporation, it shows the amount received at Mechanic Street Substation from the Staten Island Edison Corporation.

The next column shows the Mechanic Street Substation local load.

The difference between the local load requirements and that received from Staten Island Edison Corporation was naturally made up from a supply from Metuchen Substation and indicates clearly that a part of the energy that was delivered to Jersey Central Power and Light Company during these periods came from Staten Island Edison Corporation system.

Q. Mr. Grimsley, have you prepared an exhibit showing the inflow and outflow of energy at Mechanic Street Substation under these conditions which prevailed at the times shown on Exhibit No. 17?

A. Yes, sir; I have.

Q. I show you an exhibit, Mr. Grimsley, and I will ask you if that is the statement prepared by you showing substation load and supply at the times also shown on Exhibit No. 17?

A. Yes; that is correct. This shows a little more clearly just what I stated before, that may be concluded from the data shown on Exhibit No. 17.

MR. McALLISTER: Mr. Examiner, I offer in evidence as Commission's Exhibit No. 18 the statement just identified by the witness and ask that it be received in evidence.

MR. PAXSON: That is objected to as incompetent, irrelevant and immaterial. It has to do with alleged transactions all occurring subsequent to March 14, 1938.

EXAMINER SPENCER: The objection is overruled.

Let it be admitted as Commission's Exhibit No. 18.

(The document above referred to was received in evidence and marked Commission's Exhibit No. 18.)

BY MR. McALLISTER:

Q. Mr. Grimsley, will you please explain the conclusion which may be reasonably drawn from Commission's Exhibit No. 18 as indicating a flow of energy from Staten Island Edison Corporation to Mechanic Street Substation?

A. It shows the receipts of energy from Staten Island Edison Corporation in one column.

In the next column it shows that delivered to Jersey Central Power and Light Company for the same period, and in the next column the local load requirements, then the General Cable load.

The sum of the latter two columns is the Mechanic

Street load. It shows the total requirements, and the last column shows the excess load over supply at the Mechanic Street Substation, which obviously would have to be supplied from the Metuchen Substation, and it indicates clearly that a part of this energy delivered to Jersey Central Power and Light Company during the period must necessarily have come from the Staten Island Edison Corporation.

Q. I direct your attention to the eighth line on that statement—

MR. PAXSON: If the Commission please, all of these questions on this exhibit also are objected to by me for the same reason. I do not want to interrupt continuously.

EXAMINER SPENCER: Yes, Mr. Paxson. Let the record show attorney for respondent objects to each question relating to the matters shown by this exhibit. The objection is overruled and an exception is noted.

MR. PAXSON: For the same reason.

BY MR. McALLISTER:

Q. On May 8, 1938, Mr. Grimsley, at 6 o'clock a. m. you show 2,000 kilowatts coming from Staten Island Edison Corporation to Mechanic Street Substation. Is that correct?

A. That is correct.

Q. At the same time, 1,000 kilowatts was being delivered to the line of the Jersey Central Power and Light Company leading out of Mechanic Street Substation?

A. That is correct.

Q. In the next column you show local load, 1230 kilowatts. Is that correct?

A. That is correct.

Q. That is the load that is utilized through the trans-

former banks at the Mechanic Street Substation, is that true?

A. That is true." Then it goes out over the 4 K.V. system.

Q. In the next column you show the load of the general Cable Company as being at that time 730 kilowatts?

A. That is correct.

Q. So the total load on Mechanic Street Substation at that particular time, including the energy flowing to Jersey Central Power and Light Company, was 2960 kilowatts?

A. That is correct.

Q. At the same time you were receiving from Staten Island Edison Corporation 2,000 kilowatts?

A. That is correct.

Q. Which would leave a balance of 960 kilowatts to be supplied from some other source?

A. That is correct.

Q. Does it not mathematically appear that if Jersey Central Power and Light Company is receiving in excess of the total required from outside sources that necessarily as part of the load moving to Jersey Central Power and Light Company must come from Staten Island Edison Corporation?

A. That is correct.

Q. When I said "load" there, Mr. Grimsley, I meant supply.

A. That is correct.

Q. That would not change your answer?

A. No, sir.

Q. It was that consideration of the figures shown on Commission's Exhibit No. 18 which induced you to conclude that part of the energy delivered to Jersey Central Power and Light Company at the time shown on Exhibit No. 18 originated on the facilities of Staten Island Edison Corporation?

A. That is correct.

Q. And that flow of energy out of Mechanic Street Substation to Jersey Central Power and Light Company would necessarily flow over the facilities of Jersey Central Power and Light Company from the south bank of the Raritan River to the substation of the Jersey Central Power and Light Company located at their power plant in South Amboy?

A. That is correct.

Q. In other words, the same facilities would be used in the transfer of energy from Mechanic Street Substation? I mean the same facilities owned by Jersey Central Power and Light Company would be utilized in the transmission of electric energy from Mechanic Street Substation to the substation at South Amboy as would be used in the transfer and transmission of energy in the reverse direction?

A. That is correct.

EXAMINER SPENCER: Gentlemen, at this time we will take a five-minute recess.

(Thereupon a short recess was taken, after which the following occurred:)

EXAMINER SPENCER: The hearing will be resumed. Proceed, Mr. McAllister.

MR. McALLISTER: Mr. Examiner, as the record shows, I have two or three exhibits which have been merely identified and not offered in evidence. I would like to withdraw Mr. Grimsley for the time being in order that I might put on a witness who will enable me to establish the verity of the information contained on the exhibits, which Mr. Grimsley was not able to do, and then I may offer them in evidence.

EXAMINER SPENCER: All right, proceed.

Whereupon

P. B. BASS,

a witness produced by and on behalf of the Federal Power Commission, having first been duly sworn by the Examiner, was examined and testified as follows:

Direct Examination

BY MR. McALLISTER:

Q. Mr. Bass, will you state your full name and address for the record, please?

A. P. B. Bass, Elizabeth, New Jersey.

Q. By whom are you employed, Mr. Bass?

A. Public Service Electric and Gas Company.

Q. What is your position with that company?

A. I am assistant division superintendent, central division.

Q. Will you describe in a general way the area under your jurisdiction?

A. The area under my jurisdiction comprises Union County, which is in the central part of the state, also parts of Middlesex and Somerset Counties in New Jersey.

Q. Could you describe the area under your jurisdiction having relation to the lines and operations and towns which you serve, having particular reference to the substations that come directly under your supervision?

What I have in mind, Mr. Bass, is the area indicated on the exhibits which have been received in evidence as Exhibits 9 and 10. 10 is rather a large area.

A. Well, on Exhibit 9 are shown Mechanic Street, Carteret, Rahway, Keasby, Metuchen, Tremley and Linden substations. All of these substations come under my jurisdiction.

Q. And does your jurisdiction extend to other territories?

A. It extends to other substations in this Central Division.

Q. Mr. Bass, do you maintain substation logs in the various substations which are operated under your jurisdiction?

A. We do.

Q. Are instructions issued as to the manner in which those logs are to be kept uniform to all substations?

A. That is correct. We have a standard procedure for taking readings in substations.

Q. Can you state what times in the day?

A. Readings are taken on all feeders, both 26,000 volt line and local distribution, hourly, from 12 midnight until 6 a. m., and from 6 a. m. until 12 midnight, every half hour.

Q. And those half hour readings are taken on what might be termed 30 minute intervals?

A. 30 minute intervals.

Q. Would you describe briefly for the record just what these log sheets are and their significance in the operation of a substation? Why are they maintained?

A. They are maintained in order that we may be able to study the readings of the substations for any day of the week or month. In other words, we can go back over these logs and determine the load on the feeders and the load on the substation at any time.

Q. And from what source is the information that is recorded on the log sheets obtained?

A. It is obtained from indicating and recording instruments which are on the switchboard in the substation, obtained by the operators.

Q. Are these records kept and preserved for any period of time?

A. Oh, yes, they are kept for years. Just how many years I can't say, but they go back over at least five or six years. I can state that.

Q. Would it be reasonable to say the log sheets tell the story of what is transpiring or has transpired in a substation at any particular time?

A. They do; yes, sir.

Q. Do the log sheets and operation of Mechanic Street substation come under your jurisdiction?

A. They do.

Q. Mr. Grimsley in testifying said that the log sheets in Mechanic Street Substation were made available to him for examination. Are those log sheets that were made available to Mr. Grimsley the regularly maintained records and log sheets that are kept in connection with the operation of that Mechanic Street Substation?

A. They are. They are kept at our district office at Perth Amboy. They were made available at that point.

Q. Those are the official records of the company that were made available to him which record these readings from the various instruments in the substation on the log sheets?

A. They were the official records.

Q. Mr. Grimsley in testifying stated that certain loads at Carteret, Keasby, Rahway, Linden, Tremley, and Metuchen Substations were furnished to him by Public Service Electric and Gas Company.

Those loads, I believe you stated, at those substations are determined from the logs that are regularly maintained and kept in connection with the operation of those substations?

A. That is correct. From those daily logs we prepare what we call load curves, showing the load every hour of the day. It is a graph showing the load.

Q. I believe you were furnished with a copy of that statement and asked to verify the correctness of the information supplied, as taken from the records which are regularly kept under your supervision and direction, is that correct?

A. That is correct.

Q. And have you found whether or not those figures which were supplied to Mr. Grimsley and which are record-

ed on Exhibit 13 are the correct and true figures representing the loads at these substations at these times as determined by you from your records?

A. I had these loads checked and find that they are all correct with the exception of readings at Metuchen Substation, shown in the last column on the right for the date August 5th. There are three readings for Metuchen Street Substation for August 5th, a reading at 7:00 a. m., 7:30, and 8:00 a. m. The readings shown are 680, 600 and 640. The correct readings are 920, 920 and 1,250.

Q. Otherwise, they are all correct?

A. Otherwise they are all correct.

Q. Mr. Bass, Mr. Grimsley in testifying stated that he was supplied by Public Service Electric and Gas Company with figures indicating the power factor at the substations in the Central Division at times of ordinary heavy load conditions.

Will you state for the record whether those figures which are shown on Exhibit 14 are correct figures as shown by the records of Public Service Electric and Gas Company?

A. I would say they are substantially correct.

Q. Will you describe for the record just what elements are taken into consideration in determining what this power factor is or should be?

A. Well, the power factor as given in Exhibit 14 does not show at what time the power factor was taken, and of course the power factor varies with the time of day and type of load the substation is supplying. Some of our industrial substations are supplying power load and others light load, and naturally the power factor is going to vary.

Q. What condition is assumed to exist at the time these power factors were determined?

A. Apparently these power factors are for heavy load conditions, and upon examination I would say that they are about what I would expect them to be for the substations listed here.

Q. Are any official tests made from time to time to determine what the power factors actually are?

A. Yes, we have our laboratory make tests from time to time to determine what the power factor is on our various substations at different times of the day.

Q. Did the laboratory tests indicate the correctness of these figures which you say in your judgment are correct?

A. They do for Mechanic Street, Carteret, Metuchen, Keasby, Tremley, and Rahway Substations.

Q. With respect to the other substations—

A. (interposing) That leaves Mechanic Street Substation general cable and Linden Substation for which I have no test records.

Q. Will you state what times these tests were made?

A. Mechanic Street Substation at 10:50 a. m.; Carteret Substation, 7:45 p. m.; Metuchen Substation, 7:05 p. m.; Keasby Substation, 10:40 a. m.; Tremley Substation, 1:11 p. m.; and Rahway Substation, 7:00 p. m.

Q. And from your knowledge of operations at these substations would you say that these readings were taken at what might be considered at times of ordinary heavy load conditions?

A. I would say that, yes.

Q. Mr. Grimsley, in his testimony, referred also to the fact that certain line impedances in the Central Division were supplied by the Public Service Electric and Gas Company.

In that connection, Mr. Bass, is it a fact that you keep regular, detailed information on the various lines which connect substations in the Central Division?

A. We do.

Q. And that information is assembled and maintained and kept under your supervision and direction?

A. That is correct.

Q. And in that connection do you obtain additional

data and information necessary to make a determination of the line impedances over the transmission lines which connect the substations in the Central Division?

A. We do. We furnish our engineers with the length of line broken down in lengths and sizes of cable and open wire together with the arrangement of the open wires, and they compute the impedances of those lines and furnish us with a copy.

Q. The information furnished by Mr. Grimsley as shown on Exhibit 15, is that information which was supplied by Public Service Electric and Gas Company to Mr. Grimsley?

MR. PAXSON: Which one is this?

MR. McALLISTER: 15.

BY MR. McALLISTER:

Q. Exhibit 15 records the information which was supplied by Public Service Electric and Gas Company to Mr. Grimsley showing the line impedances for the Central Division?

A. Lines in the Central Division?

Q. That is right.

A. Not all lines, certain lines. What is the question?

Q. Is the information recorded on Exhibit 15 the information which was supplied to Mr. Grimsley?

A. It is.

Q. And the basic information upon which those impedances was determined, is that information which was supplied by you after assembly under your supervision and direction, is that correct?

A. That is correct.

Q. And now as to the computation as to the impedances in these lines, can you state whether or not the figures shown on Exhibit 15 are correct?

A. I have checked these and with one exception I

would say they are all correct. I checked them on a slide rule within one or two hundredths. The impedances are given within two decimal points. I checked in one decimal, one-hundredths you might say. One, I find is a little different from what is given here.

Q. On Exhibit 15?

A. On Exhibit 15; yes, sir.

Q. Will you indicate what that is?

A. On Mechanic Street N-196, the impedance shown on Exhibit 15 is 4.39. I calculate that to be 3.99.

Q. Otherwise the information shown on that exhibit is correct, as you have stated?

A. The impedances I checked. I did not, however, check the angle. I checked the impedances.

Q. But if the basic information and data is utilized the angle can be readily computed, can be as readily computed as the impedance?

A. It can be computed from the data which is used to compute the impedance.

Q. It is merely a mathematical computation?

A. That is right.

Q. Mr. Bass, is the line, the circuit connecting the Mechanic Street Substation with the Staten Island Edison Corporation operated as an open or closed circuit?

A. It is closed. That is, it is normally in service, two lines.

Q. Two lines?

A. Yes, and they are both in service normally.

Q. And by that you mean under any ordinary, usual conditions, they are in service and it would be an extraordinary circumstance if they are out of service?

A. That is correct.

Q. Does that same condition exist in the line and circuit which connects Mechanic Street Substation with the power plant of the New Jersey Power & Light Company at South Amboy?

A. That is correct. They are both in service at all times under normal operating conditions.

Q. Mr. Bass, I direct your attention to Exhibit 10. There is shown on Exhibit 10 a line indicating a circuit south from Elizabeth, which joins with a circuit from Tremley to Linden, or is that from Rahway to Linden?

A. Rahway to Linden, and that joins at the Rahway Substation.

Q. Now what is the usual operation over that line? Is it operated as an open or closed circuit?

A. It is operated as a closed circuit. I beg your pardon, as an open circuit.

Q. That is normally, there is no connection on that line with Rahway Substation? I mean the connection is there, but the circuit is broken by the switch being open.

A. That is correct, it is normally open.

Q. Now there is also shown on that exhibit a circuit from Elizabethport to a point somewhere near Tremley. Now is that circuit operated open or closed?

A. That is operated open.

Q. Open also?

A. That is right.

Q. The conditions of operation and lines, and layout in the substations as shown on Exhibit 9, Mr. Bass, have they remained substantially as they are for some time, or have there been any recent changes that would affect the operating conditions in that area?

A. Well, do you mean by some time? They have been that way for a year or so.

Q. Have there been any material changes or any changes since January, 1938?

A. No.

Q. Would your answer be the same for the period from January 1, 1937?

A. That would bear checking, but I think my answer would be yes, would be that there have been no changes;

have been substantially the same since January, 1937, or somewhere in there, we made a slight change the first of 1937. I am not certain of the date.

Q. Somewhere around the first of the year 1937?

A. Yes, sir.

Q. What was that change you had reference to? Was that in Mechanic Street Substation?

A. No, it had to do with cutting into service with Linden Substation.

Q. I see.

A. Which was looped in on a circuit between Railway and Tremley. It was a new substation cut in service.

Q. And that was the only change affecting the operation of the area shown on Exhibit 9 since approximately the first of the year 1937?

A. That is correct.

Q. This change at about that time is the only change which you say has taken place in the layout of the lines and substations in that area?

A. That is correct.

MR. McALLISTER: Off the record, please.

EXAMINER SPENCER: Off the record.

(Discussion off the record.)

MR. McALLASTER: I turn the witness over to counsel for cross examination.

EXAMINER SPENCER: You may proceed.

MR. PAXSON: I only have one question. I might as well ask it now.

Cross Examination

BY MR. PAXSON:

Q. Mr. Bass, referring to Exhibit 14, are the power factors at the time of the light load much different than

those shown in Exhibit 14?

A. I haven't in front of me a record of the tests that were made. I can give you base angle readings and from those you can determine the power factor at light load, which are not given here.

Q. In other words, Mr. Bass, you can't answer the question, but you toss it back to me.

A. If I had a table, I could. I have the angle. I haven't worked out the power factors.

Q. They are available?

A. They are available, that is correct.

MR. PAXSON: That is all.

(Witness excused.)

MR. McALLISTER: At this time, Mr. Examiner, I would like to offer in evidence Exhibits 13, 14, 15 and 16.

EXAMINER SPENCER: 16 has been offered, has it not?

MR. McALLISTER: No, it has not. It is based on the information contained in some of the other exhibits, so I did not offer them, but merely identified them. Now, having through Mr. Bass established the verity of the basic information that is related on these exhibits, I ask that they be received in evidence and assigned the numbers that were given to them when they were identified.

EXAMINER SPENCER: Any objection?

MR. PAXSON: Just a moment, I want to gather these together.

EXAMINER SPENCER: Mr. McAllister, I think Mr. Paxson wishes to address you.

MR. PAXSON: As to Exhibit 13 offered in evi-

dence, as to this paper offered in evidence as Exhibit 13, I object as to any figures shown for the year 1938 on the ground that they are incompetent, immaterial and irrelevant, as all the figures there shown are for dates subsequent to March 14, 1938.

I have the same objection to the compilation proposed as Exhibit 16. Same objection to both of them, all the figures for 1938 on proposed Exhibit 16 are for a date subsequent to March 14, 1938.

EXAMINER SPENCER: 15 and 16?

MR. PAXSON: 13 and 16.

EXAMINER SPENCER: 13 and 16. Let the record show that the statement offered by counsel for the Commission, identified as No. 13, is to be assigned to No. 13, Exhibit No. 13, and is admitted over the objection of the attorney for the respondent, and the statements identified to be assigned to Nos. 14 and 15 are admitted without objection, then the statement to be identified as Exhibit 16 is admitted over the objection of the attorney for the respondent.

(The papers referred to, previously marked for identification, were marked Commission's Exhibits Nos. 13, 14, 15 and 16, respective, and received in evidence.)

MR. McALLISTER: Mr. Paxson, I understood you to say that 16 related to information only for the year 1938. Did I misunderstand you?

MR. PAXSON: No, I said all transactions referred to having occurred in 1938 were subsequent to March 14th of that year. I have no objection to the data for the year 1937 subject to the usual right to check, although I have no doubt in view of the evi-

dence, they are correct.

EXAMINER SPENCER: You may proceed, Mr. McAllister.

MR. McALLISTER: Mr. Examiner, I have no more questions to put to Mr. Grimsley at this time since these exhibits have been received in evidence, and he is available for cross examination, and I was going to suggest we recess at this time and then come back and let him begin his cross examination, and then let opposing counsel begin their cross examination after recess rather than start it now. It is only a matter of 10 or 15 minutes left.

MR. PAXSON: Mr. Examiner, I would like to make a motion.

EXAMINER SPENCER: I will hear you, Mr. Paxson.

MR. PAXSON: I have no objection to taking a recess at this time, but at this time I wish to make a motion that this hearing be adjourned to a subsequent date to be fixed by the Commission, at least for one week or two weeks.

In the first place I had a telephone call last evening on a matter of great urgency which requires, and probably will require all my time this afternoon, to take up some very urgent matters with the Federal Power Commission, and it has to do with the transfer of some properties of the Kentucky Tennessee Power Company, which I represent, to some municipality and the TVA, and it is very urgent, as it is necessary that some papers be filed, and it must be taken up at once. For the afternoon, I am trusting at least, the Commission will excuse me so I can take up other matters of great urgency.

Secondly, as to tomorrow, Mr. Crumley, and my associate, Judge Antenrieth, have other engagements of great importance so they can not be available tomorrow, and in addition, from the evidence and testimony that has been introduced, Mr. Grimsley here has introduced some 18 exhibits, highly complicated, showing great enterprise on the part of both Mr. Grimsley and counsel, and he has also offered and over our objection introduced by reference reports of I don't know how many different companies which he states are available to us. We of course have had no opportunity or time to study them or know what they are about. It may be after certain studies I may not care to cross examine Mr. Grimsley at all. There must be nearly 200 pages of testimony here. As I say it is highly complicated of an engineering character and it really probably requires a professional engineer to prepare questions for the proper cross examination. If I am compelled to do so I can do my best, but I am afraid much more time would be consumed.

EXAMINER SPENCER: I would like to request counsel for the respondent to reduce his motion to writing and submit it this afternoon. What time do you have your engagement this afternoon?

MR. PAXSON: The sooner the better.

EXAMINER SPENCER: We will recess until two o'clock.

MR. McALLISTER: I just want to make a statement on the record before consideration is given to such a motion.

EXAMINER SPENCER: I am not going to consider it now. I asked that they reduce it to writing and will consider it this afternoon.

MR. McALLISTER: I would like to make this statement before recess, that this matter is a matter which respondent must have had in mind for some considerable period of time. In other words, whether or not these utilities are public utilities or not, that is whether they engage in the transmission of electrical energy in interstate commerce, are matters which they must have given some consideration to, based on assumption, and they should be prepared to show upon the record now wherein they relied for their claim, as stated in their answer to the motion to show cause, that these companies, that the Jersey Central Power & Light Company does not own facilities utilized in the transmission of electrical energy in interstate commerce and does not engage in the sale of electrical energy for resale at wholesale.

I am opposed to the granting of any continuance for these reasons.

Mr. Paxson appears with another member of his firm in this case and we should be able to proceed this afternoon, even if Mr. Paxson finds it necessary to be absent.

It can be reasonably assumed a case of the character which we have here should be completed without the necessity for a recess when the basic data and information which we have put in is basic data and information that is available to all parties and is not as voluminous as it has been made to appear. Information has gone in slowly, Mr. Paxson has a copy of the transcript of the proceedings from yesterday, and all data and information appears to be presently available for the continuance of this case to its conclusion.

MR. PAXSON: I wish to make one other statement. Certainly we have given a great deal of consid-

eration to the question whether Jersey Central is a public utility and we have reached the firm conclusion it is not. We haven't heard any testimony thus far which indicates a contrary belief and when the time comes for us to put in our direct testimony which we are preparing now and will then be prepared to put it in, we expect to show that our contention is right.

It seems to me in opposing this motion counsel for the Commission has taken a position that is rather surprising to me. I did not consider this was in any way an adversary action. I assumed it was an investigation to ascertain facts. I assume all the Commission is interested in and all Mr. McAllister, representing the Commission, is interested in is what the facts are and ascertaining those facts and letting the chips fall where they may. I know he is not interested at all in shutting off cross examination of a competent character prepared by engineers which might expedite the hearing, simply for the sake of winning a lawsuit. I don't suppose he is.

MR. AUTENRIETH: May I, if the Examiner please, join in the application of Mr. Paxson on behalf of the Jersey Central Power & Light Company? I find the cross examination of Mr. Grimsley presents a great many unforeseen matters by reference to other reports and documents we have had no time to see, and I think time would be saved of your own and the Commission's if we can cut out all of this reference situation that may or may not be of importance.

EXAMINER SPENCER: Can you prepare your written motion and submit a copy to Mr. McAllister before two o'clock? That will be possible, will it not?

MR. PAXSON: Yes.

MR. McALLISTER: I just want to say on the

record so it will appear I am as much concerned about the facts as Mr. Paxson is, and it is only the facts and the true facts we are looking for, but we do like to begin a hearing and conclude it without any unnecessary delay, and to my mind there seems to be no necessity for continuing the hearing to a later date.

EXAMINER SPENCER: Consideration will be given the motion at two o'clock. We will now take a recess until two o'clock.

(Whereupon, at 12:20 o'clock p. m. a recess was taken until 2:00 o'clock p. m. this day.

AFTERNOON SESSION

(The hearing was resumed at 2 o'clock p. m., pursuant to the taking of the recess.)

EXAMINER SPENCER: Gentlemen, the hearing will now be resumed.

MR. McALLISTER: Mr. Examiner, I have one statement that I omitted to put in while Mr. Bass was on the stand. Mr. Bass wishes to get away, however. This is a matter that I mentioned to counsel for respondent. It has to do with information that was supplied to us by the Public Service Electric and Gas Company over the signature of the Assistant Comptroller, showing the interchange of electric energy between Public Service Electric and Gas Company and Staten Island Edison Corporation. Mr. Bass has verified the figures. He has been sworn, and I would merely like to have him identify the exhibit and then let him return home. I am perfectly willing to save

to Mr. Paxson his exception as to those readings shown after the 14th day of March of 1938.

EXAMINER SPENCER: Mr. Paxson does not have an associate here?

MR. AUTENRIETH: Both of them are away at this time.

EXAMINER SPENCER: At what time is it necessary for Mr. Bass to leave?

MR. McALLISTER: He is trying to catch the 3 o'clock train.

MR. AUTENRIETH: Personally I have no objection. Mr. McAllister spoke to me about it before. But I do not want to anticipate the question and answer for Mr. Paxson.

MR. McALLISTER: I have not yet offered this in evidence but I was thinking it was of little consequence so far as Mr. Paxson is concerned. We might let it go in and let Mr. Bass get away.

EXAMINER SPENCER: Can Mr. Bass verify it now and then you introduce it later.

MR. McALLISTER: Yes, Mr. Examiner.

P. B. BASS

was recalled as a witness by and on behalf of the Commission and, having been previously duly sworn, testified as follows:

Direct Examination

BY MR. McALLISTER:

Q. Mr. Bass, the letter dated April 28, 1938, which I have just handed to you is signed by William J. Reynolds, Assistant Comptroller of Public Service Electric and Gas

Company, and purports to transmit information showing the interchange of electric energy between Public Service Electric and Gas Company and Staten Island Edison Corporation. Will you state whether or not from the records maintained under your jurisdiction the flow of energy shown thereon is correct and whether you have checked it?

A. I have had the records checked and the report is that they are correct.

Q. As shown on this statement?

A. As shown on this statement.

MR. McALLISTER: That is all.

Cross Examination

BY MR. AUTENRIETH:

Q. From where were these records taken, Mr. Bass?

A. These records originated from the Comptroller's Office. As I understand it, they were sent to the Federal Power Commission. I had these records checked against our operating records and they were verified.

Q. Where are the watt meters located?

A. The watt meters are located at Mechanic Street Substation.

MR. AUTENRIETH: That is all.

MR. McALLISTER: That is all.

EXAMINER SPENCER: You may be excused, Mr. Bass.

(Witness excused).

MR. McALLISTER: Mr. Examiner, I will offer this letter and the statement which has just been identified by Mr. Bass. I will offer the documents as Com-

mission's Exhibit No. 19. I ask that you reserve your ruling on that offer, Mr. Examiner, until Mr. Paxson has had an opportunity to see it. I would not want to undertake to pursue this course if it were not for the fact that I promised Mr. Bass that he could get away, and we have now gone 15 minutes beyond the time set for convening the hearing. I do not think it is anything that Mr. Paxson would object to.

MR. AUTENRIETH: I do not think so. It is information we have already.

MR. McALLISTER: As long as the witness has identified it and stated it first, of course, that is the thing we are interested in primarily.

EXAMINER SPENCER: Do you have further witnesses, Mr. McAllister?

MR. McALLISTER: Not until the cross examination of Mr. Grimsley is completed.

MR. AUTENRIETH: I might say, Mr. Examiner, the Jersey Central Power and Light Company's interest in this matter does not relate to whether or not the Jersey Central Power and Light complied with the law in the matter of transfer of securities. The Commission's action on that, perhaps, in a general sense is not our concern. We are concerned in the matter incidental thereto, in the matter of the determination of interstate commerce. In that connection I have arranged with Mr. Paxson that he conduct the cross examination. Of course, his interest is greater than ours in that respect, so I shall appreciate it if you will indulge us a few more minutes before carrying on. I heard that Mr. Paxson is on the way here.

EXAMINER SPENCER: Then, we shall wait for a few minutes.

MR. McALLISTER: Mr. Paxson is now arriving, Mr. Examiner.

EXAMINER SPENCER: You may proceed.

MR. McALLISTER: Mr. Paxson, Mr. Bass wanted to get away, and in your absence I had a statement that I merely wanted him to identify. I would like to have you look at it, if you will. I do not think you will have any objection to it. It is merely a statement by him that they are verified and that it represents the operating records.

MR. PAXSON: Do you want to put in the whole thing?

MR. McALLISTER: Yes. I have offered it, but I asked the Examiner to reserve his ruling until you had an opportunity to examine it. I stated that I was perfectly willing that his ruling reserve you an exception as to the readings which related to dates subsequent to March 14, 1938.

MR. PAXSON: I understand Mr. Bass verified this?

MR. McALLISTER: Yes.

EXAMINER SPENCER: I will have the reporter read the testimony of Mr. Bass for your benefit, Mr. Paxson.

(The testimony of the witness P. B. Bass on this matter appearing on pages 181 and 182 of this transcript was then read by the reporter.)

MR. PAXSON: I would have no cross examination of Mr. Bass. I have only one objection to this offer as an exhibit, and that is the same that I have made heretofore, that any transactions which were

subsequent to March 14, 1938, are incompetent, irrelevant and immaterial.

EXAMINER SPENCER: Let the letter and the attached statement be admitted as Commission's Exhibit No. 19.

(The documents above referred to were received in evidence and marked Commission's Exhibit No. 19.)

MR. PAXSON: At this point I wish to apologize most profusely to the Examiner and to all of you gentlemen for having been delayed so long. I find I really overestimated my ability in getting a stenographer in Washington at lunch time who could type out any adequate petition, no matter how small. As it is being done there were so many errors in it that it was impossible to bring it with me, but it will be here at any time.

Well, it has just arrived, Mr. Examiner.

If the Commission please, I have a motion for adjournment of this hearing which I wish to file with the Commission. A copy has just been served on Mr. McAllister.

EXAMINER SPENCER: Let the record show that counsel for New Jersey Power and Light Company and counsel for Jersey Central Power and Light Company filed a motion for adjournment of the hearing.

It is ordered that the written motion be made a part of the record in this case.

Now, Mr. Paxson, will you read that motion, please?

MR. PAXSON (reading): "Motion for Adjournment of Hearing

"To the Federal Power Commission:

"The petition of New Jersey Power & Light Company and Jersey Central Power & Light Company by C. Edward Paxson and Joseph M. Autenrieth, counsel for respondent and intervener, respectfully represents that:

"1. Pursuant to the order of the Commission, this cause came on to be heard at 10 a. m., September 27, 1938, and has since continued. During the proceedings already had, counsel for the Commission has introduced extensive testimony by Mr. Grimsley all of a scientific and engineering character and has through the said witness submitted for the record, eighteen exhibits of a technical and engineering character. The Commission has at 12 o'clock noon, September 28, concluded its direct examination of Mr. Grimsley and has offered the witness for cross examination.

"2. The testimony of Mr. Grimsley will comprise about two hundred pages of typewritten record and is a result of engineering and scientific studies made by Mr. Grimsley as to the physical characteristics and the operations conducted on at least five large operating public utility properties, only two of which are parties hereto. His testimony is to a large extent concerned with theoretical problems in physics and electrical engineering. The exhibits introduced are to some extent conclusions derived by the witness from his intensive studies. Some of the exhibits depend upon calculations made by the witness after an examination of recorded data which explained hundreds, even thousands, of daily transactions in the interchange of power between several large operating public utilities. Some of the exhibits introduced by this witness are based in part upon the public records of the Federal Power Commission as to the operations of companies

not involved in this proceeding for the last four years.

"3. The nature and extent of the testimony and exhibits thus offered on behalf of the Commission is such as to make it physically impossible for counsel to conduct any pertinent or relevant cross examination until such counsel have an opportunity to submit the testimony of Mr. Grimsley, the exhibits introduced by Mr. Grimsley and the data supporting such exhibits which are in the public files of the Commission to the scrutiny of competent engineers. Counsel are by the very nature of the testimony rather than by any lack of preparation totally unprepared to search into the matters introduced by Mr. Grimsley. Counsel by nature of the case are unprepared to state whether any cross examination is necessary and represent that, after consultation with their engineers, they may determine that no such cross examination is necessary in such event there would be a considerable saving of the time which would be otherwise wasted by the continuance of the public hearing. If said public hearing be continued at this time, counsel may in the interests of their clients be compelled to take Mr. Grimsley over every step of his direct examination, point by point. If the hearing be continued such a course of proceedings would not be necessary since the studies could be examined by competent engineers in an orderly and efficient manner.

"4. The instant hearing has for its object the ascertaining of physical facts as to the properties owned by the parties hereto and the methods by which they conduct their business and the methods by which they operate their property. The proceeding is distinctly not one of adversary character. The facts in this case do not change from day to day. There can be no prejudice to the Commission nor can the public

interests be adversely affected by a continuance which will permit the orderly and efficient conduct of this public hearing.

"5. Mr. C. Edward Paxson, counsel for New Jersey Power & Light Company, has been the individual who has been actively in charge of the conduct of the proceedings herein for respondent. Mr. Paxson has just received notice that several urgent matters which require immediate conference with the Federal Power Commission, to wit, the proposed sale of certain utility properties to municipalities located in TVA area, require his immediate attention. In order to properly handle said matters, Mr. Paxson will be required to devote two working days to the preparation of papers, conferences with attorneys for the Federal Power Commission, and others, before he can be relieved from the pressure of said matters by any other attorneys.

"Mr. Autenrieth and Mr. Crumley, President of Jersey Central Power & Light Company, have an extremely important engagement which will occupy their time on Thursday, September 29, 1938, which will require their presence in New Jersey; and Mr. Autenrieth also has an engagement on Friday, September 30, before a New Jersey United States District Court, which requires his personal attention and which cannot be delegated to another attorney.

"Wherefore, the Commission is respectfully moved to grant an adjournment of the hearing herein until ten o'clock a. m., Monday, October 10, 1938."

And, I might add, "or until such other time as may seem proper to the Commission."

EXAMINER SPENCER: Since notice that this motion would be made was given very careful thought

and consideration has been given to the motion. The Examiner recognizes the fact that it may be difficult to cross examine Mr. Grimsley, yet this is a matter that ought to be concluded, and after careful consideration I have reached the conclusion that it will not be advisable to continue the hearing for any length of time, and it ought to be concluded at this sitting.

I think it may be possible to arrange the further cross examination of Mr. Grimsley, if counsel so desires, and leave him for one of your last witnesses, if that would be of any advantage.

MR. McALLISTER: Mr. Examiner, that can not be done until the cross examination of Mr. Grimsley is completed.

EXAMINER SPENCER: Unless counsel wishes to put on other testimony. If it is necessary for him to be cross examined before you can determine whether you will put on any other testimony, it can not be done.

MR. McALLISTER: That is the position I am in now. I tried to make that plain before the noon recess.

EXAMINER SPENCER: I am merely suggesting that it might be of some benefit to counsel for respondent and Jersey Central Power and Light Company.

MR. McALLISTER: Mr. Examiner, there is nothing about the testimony that has been submitted by Mr. Grimsley that is unusual or extraordinary or in the nature of surprise. It is based upon substantial evidence. The testimony is from facts and records available which, as a matter of fact, we know that respondent has already had access to over the elapsed period of time. I mean the records at Mechanic Street

Substation and other records that are made available by the Public Service Electric and Gas Company to the Federal Power Commission have likewise been made available to the respondent, and they have made use of them. They have had engineers down there. They had engineers down there for a period of time going over those records. This is not something that has come up of a sudden. It is not something that is of such a character that it is wholly foreign to their consideration.

I can not see any justification for extending or delaying the cross examination on matters which are based upon those fundamental facts which are equally available to all parties. And when the testimony Mr. Grimsley has put in is related to those substantial facts it follows along orderly any of the conclusions stated can be inquired into now as easily as at a later date.

EXAMINER SPENCER: Let the record show the motion is denied.

If counsel requires any time to get up any statistical rebuttal evidence to anything that has been introduced, such reasonable time as may be necessary may be granted later.

You may proceed.

MR. McALLISTER: Mr. Examiner, may I have an understanding as to the nature of that ruling?

EXAMINER SPENCER: I have not made a ruling except to deny the motion.

MR. McALLISTER: Thank you, Mr. Examiner.

EXAMINER SPENCER: You may proceed, Mr. McAllister.

MR. PAXSON: May I ask for a short recess of about ten minutes, Mr. Examiner?

EXAMINER SPENCER: We will now recess for ten minutes.

(Thereupon a short recess was taken, after which the following occurred:)

MR. AUTENRIETH: If the Commission please, I understood the Examiner's ruling to be that we could for the time being reserve our cross examination if we cared to go forward on the case. Mr. Crumley can not be here tomorrow, and he has requested that we be permitted to put him on now, which is part of our direct case.

EXAMINER SPENCER: Mr. McAllister says that he can not determine whether or not he will need other witnesses until the cross examination of Mr. Grimsley is completed. Therefore, it would seem that that plan would not be feasible. I am afraid you will have to proceed with the cross examination of Mr. Grimsley in the usual way.

MR. AUTENRIETH: In that situation, Mr. Examiner, Mr. Crumley will not be here tomorrow, and I would like to have some understanding that if we finish some time early tomorrow that we hear him on Friday morning.

EXAMINER SPENCER: Is he your first witness?

MR. AUTENRIETH: He is our first and only witness so far as the Jersey Central is concerned. Of course, we will rely upon the other witnesses in common. I was asking that we carry over until Friday and then return. Mr. Crumley can not possibly be here tomorrow. He is Chairman of the Board of Directors, and the Board of Directors' meeting is scheduled for

tomorrow. Without him there may be a lack of quorum. Some of these directors come from Boston and far-away places, and it is too late now to postpone the meeting.

EXAMINER SPENCER: I do not know how long we will continue tomorrow.

MR. AUTENRIETH: We may take all day tomorrow, and then the suggestion would not be of any importance.

EXAMINER SPENCER: Then you would want the case to carry over until Friday morning?

MR. AUTENRIETH: Yes, Mr. Examiner, for the purpose of putting in Mr. Crumley's testimony at the end.

MR. McALLISTER: That is satisfactory to me.

EXAMINER SPENCER: Then, we shall proceed with that understanding.

You may proceed, Mr. McAllister.

MR. McALLISTER: I understand that is where we stand right now, and we are waiting for Mr. Paxson to proceed.

EXAMINER SPENCER: Mr. Paxson is ready.

MR. McALLISTER: Then, I shall ask Mr. Grimsley to take the stand.

A. H. GRIMSLEY

resumed the witness stand and, having been previously sworn, testified on behalf of the Commission as follows:

Cross Examination

BY MR. PAXSON:

Q. Mr. Grimsley, when you were stating your quali-

fications at the beginning of your testimony I gathered that you are a graduate electrical engineer. Is that correct?

A. That is not correct.

Q. You are not a graduate electrical engineer?

A. No, sir.

Q. Most of your experience, as I understand it, was in railroading?

A. No; that is not correct.

Q. A large part of it was?

A. The major part of it has been in the electrical and mechanical fields.

Q. What electric companies were you with?

A. I was superintendent of the Kanawha Water and Light Company, Charleston, West Virginia.

Q. That was located in Charleston, West Virginia?

A. Yes, sir. I was in charge of, as I stated yesterday, the Electrical Department, generation and distribution, the waterworks, and, for a short period the street railway, and for a short period the gas distribution.

Q. What size territory does that company serve?

A. Then?

Q. When you were with them.

A. The City of Charleston and outlying districts. That was back in 1908 to 1915.

Q. That is when you were with them?

A. Yes, sir.

Q. They served the City of Charleston and vicinity?

A. Yes, sir.

Q. Thereafter, from 1915 to 1925, you were with what company?

A. Virginia Western Power Company.

Q. What territory did that company serve?

A. That company served the territory from Hinton, West Virginia, extending along the main line of the Chesapeake & Ohio Railroad through West Virginia and in to Virginia to Clifton Forge, and from there downward

down the James River to Balcony Falls, to Lexington, Virginia; then, later from Clifton Forge I built all of those transmission lines.

Q. You say you built them?

A. Yes, sir; I built them, designed and constructed them and operated them. And then later we acquired properties to the eastward, including Stanton, Waynesboro, Charlottesville, and a large area in there and connected all of those with high-tension transmission lines and revamped many power plants and built power plants and operated them.

Q. Did these companies belong to any big group of companies such as we have today?

A. At that time?

Q. Yes.

A. No, sir. We owned them locally. All of the common stock was held locally.

Q. Were you at the time tied in with any big systems such as a power pool such as you have described as existing in Pennsylvania and Delaware?

A. No, sir.

Q. You did not have any connection then?

A. There weren't any then.

Q. That is what I thought. During that time you didn't have any?

A. At that time, I am talking of. But we did study intensively what networks there were near us with a view of connecting them; for instance, the Appalachian System. We almost formed that connection. And then I studied with a view of purchasing other properties.

Q. I understand that, of course.

A. I wanted you to understand it.

MR. McALLISTER: I think the witness should be permitted to complete his answer, Mr. Examiner.

MR. PAXSON: I beg your pardon. He certainly has a right to complete his answer. If I interrupted

him I will ask that he proceed. I thought he was through. I did not want to interrupt the witness.

MR. McALLISTER: I think he did have something to add in connection with matters which he studied at that time. I think he should be permitted to complete his answer.

THE WITNESS: Prior to the time we started in at Charleston I do not want you to overlook the training and experience and study I made in the other branches of engineering and practice that I read into the record yesterday, which was very valuable experience. My study included pig iron blast furnaces and such things as that.

You will recall, too, in this period to which we were referring back in 1907, 1908 and 1909 and on up to 1915 there were very few networks in the United States.

MR. PAXSON: That is what I wanted to point out. I was speaking of your practical experience and not so much of what you learned from books or records filed with the Federal Power Commission.

THE WITNESS: Then in the past approximately four and a half years I have studied to a very considerable extent substantially all of the networks in the United States and have been on many of them. I made many studies. One of my principal assignments has been and is now to study the public utility status of the various companies, to study the facilities used in transmitting the energy interstate in connection with others, inter-connections, and to assemble the facts and reduce them to report form and reach conclusions for the Commission to make its determination as to the public utility status under the Act.

BY MR. PAXSON:

Q. That is while you were with the Federal Power Commission?

A. Yes, sir.

Q. But you yourself have not been in charge of nor working for any electric company since 1927? That is right, isn't it?

A. That is correct.

Q. When was this so-called power pool? Didn't you call it a power pool? When was it formed, including the Public Service and Pennsylvania Power and Light? Who are the parties in that pool? You were telling us about that yesterday.

A. I take it you followed me yesterday.

Q. I am not sure whether I followed you or not.

A. In other words, you led me up to a period there, or I did proceed up to probably a period of 1923 and connected these properties up from West Virginia east to Charlottesville. I operated those properties and had some options on other properties along in 1925. It probably dated back to 1924. And then in June, 1925, I think, I negotiated the sale of common stock of that company, Virginia Western Power Company. I remained there and helped to merge five other companies into the Virginia Public Service and set up the central operating organization.

During that period I was also retained in a consulting capacity to represent very substantial financial interests in New York for the purpose of studying other properties with a view of buying them.

Q. That is something that has to do with the sale of properties?

A. I beg your pardon?

Q. That has to do with the sale of properties, in an executive capacity?

A. I was studying them from an engineering and operating and financial standpoint.

Q. Did you ever operate a system which was interconnected with other systems during your practical experience with electric companies?

A. In Illinois when I was in charge of the Western United Gas and Electric Company we had an inter-connection with the Public Service of Northern Illinois.

Q. Did you ever operate it yourself? Did you have anything to do with the operations, like load dispatching?

A. Yes, I have done all of that.

Q. Did you with this company?

A. Yes I load dispatched for a long time. I set it up and created it and built the boards and the organization methods for operating the load. Remember that is a system as extensive as this one was, extending over a distance of some two hundred miles. In that system it was a network in itself with some four steam plants and three hydro-electric plants.

Q. What I am interested in knowing, Mr. Grimsley, is whether or not you operated a system which was interconnected with other systems owned by other interests so that you had practical experience with just how those inter-connections operated?

A. I see no difference between a network—

Q. That is not answering my question, Mr. Grimsley. I am not arguing with you. I am merely asking you a question.

A. With the exception of that in Illinois with another system.

Q. And what were those companies and systems?

A. Western United Gas and Electric Company, and I am not sure whether there were two connections or only one between that company and the Public Service of Northern Illinois.

Q. Now, then, Mr. Grimsley, I will go back to another question I asked you. You were talking yesterday about a power pool. Who composes that power pool? Is

that an arrangement covered by contract, or isn't it?

You can not remember without reading it from this little paper or memorandum you have?

A. I want to make sure of the term I used. If you are sure I used "power pool," that is perfectly agreeable to me, or if I used "inter-connected system."

Q. I am not sure myself.

A. That is what I thought when you asked the question. So I thought we would get right on it.

Q. I am not going to try to pin you down to any exact language. You were talking about a system which you said for all intents and purposes was one from an operating standpoint, and you mentioned certain companies. What are those companies? Now, really, Mr. Grimsley, you must know, don't you?

A. I do know, and I am going to tell you if you will wait a minute. But I am not going to be rushed in to guessing or being careless in my testimony.

Q. I should think one who has had so much experience and knowledge would really know the major companies and remember them.

MR. McALLISTER: I do not think this calls for an argument with the witness. I think the records he relied upon yesterday on direct examination are equally available to him on cross examination.

MR. PAXSON: I do not think any records are available except on matters of statistics and, of course, on that sort of thing. If a man was a trained engineer and had a broad knowledge, he should know.

I do not want to argue with you about it. He is attempting to qualify as an expert and he is trying to tie the Jersey Central Power and Light Company with a large system, yet he does not even know what the system is.

MR. McALLISTER: There is no basis for such a statement, Mr. Examiner.

EXAMINER SPENCER: Let him answer the question.

MR. McALLISTER: Mr. Examiner, I should like to be heard on one point.

EXAMINER SPENCER: All right, Mr. McAllister.

MR. McALLISTER: I would like to have the understanding that on cross-examination the witness has a right to rely upon the documents which he used in his direct examination. I think that is fundamental.

EXAMINER SPENCER: He is going to be permitted to rely upon them.

THE WITNESS: Mr. Examiner, I want to make sure that his question is put in such a way that I understand it. We dealt with different interconnected systems yesterday.

Now, if he means the large one embracing the Public Service Electric and Gas Company, the Philadelphia Electric Company and the Pennsylvania Power Company, then I shall proceed on that basis and answer any questions. If it was yet the larger one, which took in these other companies, we will discuss that. But I want to make sure what system he is talking about.

BY MR. PAXSON:

Q. I want to make sure what system you were dealing with yesterday.

A. I dealt with all of them.

Q. Let's take up the first one. Do you call that a separate and complete system?

MR. McALLISTER: I submit, Mr. Examiner, if a system is to be discussed it should be identified. Mr. Paxson has a copy of the transcript of testimony of yesterday and he knows what Mr. Grimsley said, and he knows what system he was discussing. There is no reason in the world why questions should be put so obtusely that no one can discover what the subject matter of the question is.

EXAMINER SPENCER: I shall ask the reporter to read the question asked by Mr. Paxson.

(The following was then read by the reporter:)

"Q. Now, then, Mr. Grimsley, I will go back to another question I asked you. You were talking yesterday about a power pool. Who composes that power pool? Is that an arrangement covered by contract, or isn't it?

You cannot remember without reading it from this little paper or memorandum you have?"

EXAMINER SPENCER: And the last couple of questions?

(The following was then read by the reporter:)

"BY MR. PAXSON:

Q. I want to make sure what system you were dealing with yesterday.

A. I dealt with all of them.

Q. Let's take up the first one. Do you call that a separate and complete system?"

THE WITNESS: It is in the record.

EXAMINER SPENCER: Mr. Paxson, will you ask your question again, please?

MR. PAXSON: As I recall it, he said there were several systems. He said he didn't know whether I

used "power pool" or "interconnected." I said I wasn't concerned with words but I wanted to know what was the arrangement between the first pool or interconnected system to which he referred; and he mentioned three companies—Public Service Electric and Gas Company, Philadelphia Electric Company, and Pennsylvania Power and Light Company. I want to know if he knows what arrangement there is between those companies for the operation of one system and interconnection.

BY EXAMINER SPENCER:

Q. Mr. Grimsley, do you know the arrangement for the operations existing among those companies?

A. The first one I discussed was the Jersey Central and its interconnections.

MR. PAXSON: Just a moment, please. I think I am entitled to have an answer to my question.

EXAMINER SPENCER: Yes, Mr. Paxson.

Do you know the working arrangement there?

THE WITNESS: I don't know what pool—

MR. McALLISTER: Mr. Grimsley, just pay attention to the question, please. The names included in the question should be sufficient to clarify it. When it is put in that way I think it should be answered, when it is identified with the names of the companies that go to make up the system.

MR. PAXSON: Of course, I was not clear about what he was identifying and I wanted to find out what he does identify.

Now, I need three, and I ask him if that constitutes to his mind one complete interconnected system.

MR. McALLISTER: Do you have in mind the three companies to which he is referring?

MR. PAXSON: Am I cross-examining or are you, Mr. McAllister?

EXAMINER SPENCER: Let's proceed regularly now, Mr. Paxson has asked a question. Proceed, Mr. Grimsley, if you can answer the question. He asked if certain companies had a working arrangement and, if so, what are those arrangements.

Now, let's have the question asked and the witness will answer it, if he can; and then no one else should have anything to say until there is a ruling on it.

Will the reporter read the last question?

(The following was then read by the Reporter:)

"MR. PAXSON: As I recall it, he said there were several systems. He said he didn't know whether I used 'power pool' or 'interconnected.' I said I wasn't concerned with words but I wanted to know what was the arrangement between the first pool or interconnected system to which he referred; and he mentioned three companies—Public Service Electric and Gas Company, Philadelphia Electric Company, and Pennsylvania Power and Light Company. I want to know if he knows what arrangement there is between those companies for the operation of one system and interconnection."

MR. McALLISTER: That is not in the form of a question, Mr. Examiner.

EXAMINER SPENCER: Mr. Paxson, will you please ask your question again?

BY MR. PAXSON:

Q. Mr. Grimsley, do you know whether Public Service Electric and Gas Company, Pennsylvania Power and Light Company and Philadelphia Electric Company are

operating what is commonly called a power pool or are interconnected as one system?

A. They are operating—

EXAMINER SPENCER: Mr. Grimsley, answer the question. Do you know that?

THE WITNESS: The question at the end has two things in it.

EXAMINER SPENCER: All right. Please proceed in your own way.

THE WITNESS: According to the records filed here I know that there is an interconnection agreement existing between those three companies under which they carry on their interchange of power through this 220 k. v. system shown on exhibit No. 1. In particular I refer to that because of the heavier transfer. There are other connections between Philadelphia Electric and the Public Service Electric and Gas Company. The substations are smaller in size and the amount of energy interchanged is not so great as through the larger group.

BY MR. PAXSON:

Q. What information you have, then, comes from the Federal Power Commission records? You don't know anything about it otherwise?

A. I do. I have been at those substations.

Q. You mean there are lines connecting those three companies?

A. I don't understand your question.

Q. I say, Mr. Grimsley, you mean you know now that there are electric lines connecting those three companies? Is that right?

A. Yes; in use and in operation, and, by the records, constantly interchanging energy. And when I was there I saw the interchange recorded and indicated by the instruments at the substations.

Q. Do you know whether there are any companies other than those three companies which are in this interchange arrangement? I am talking now, Mr. Grimsley, about a system.

A. An operating system? There are others attached to this. For instance, the New Jersey Power and Light Company is connected into this system with the Roseland substation.

Q. Is that information contained in these records which refer to this one operating system?

A. It is; and I saw the connection, and I was there.

Q. Is that in this record you referred to?

A. Yes.

Q. What record?

A. It is shown right there—Roseland.

Q. What is that record? I am trying to find out what your information is about the operations of this, as I call it, "power pool." I think that word was used. You may call it an "interconnected system." What is the arrangement between those companies? What is their arrangement? Do you know or don't you? If you say you don't know, that is all right.

A. I have the contract, very likely. I have read it and I have studied it.

Q. You say you have read their contract?

A. Yes.

Q. You know there is a contract between them governing this interchange?

A. Yes, sir.

Q. What is that contract? Is it for firm power?

A. Well, there are so many items here, discussed and set forth, diversity energy, firm energy, emergency energy, economy energy, dump energy.

Q. What are you reading from now, Mr. Grimsley?

A. A copy of the contract.

Q. Who are the parties to the contract?

A. The agreement is between the Public Service Electric and Gas Company, the Philadelphia Electric Company and Pennsylvania Power and Light Company.

Q. They are the only parties to that contract, aren't they?

A. That is all that is given. I know of no others.

Q. The New Jersey Power and Light Company and the Jersey Central Power and Light Company are not parties to that contract, are they?

A. No.

Q. That is a firm contract, isn't it, Mr. Grimsley?

A. Well, I would call it firm and binding. Whether you are referring to firm power, I don't know.

Q. Maybe my language isn't so good. I will put it another way.

That calls for firm deliveries, doesn't it, each party has the right to demand certain supplies of power from the other, don't they?

Don't you know that arrangement without reading the contract?

A. This is a voluminous thing in this way, many contracts, I do not have all those contracts in mind, but I can get the information if you will give me the time to answer every question you put.

Q. I am just trying to see, Mr. Grimsley, and I want to be as kindly as I can, to see what you know about the operations of the so-called big system yesterday you wanted to tie the respondents in with them, and painted quite a picture. You are qualified as an expert or trying to, but I want to see what you know about it.

A. All the picture I painted yesterday, I am quite sure it is recorded and correct.

As one part of this agreement between the Pennsylvania Power and Light Company, Public Service Electric and Gas Company, and Philadelphia Electric Company interconnection operating arrangements, effective

June 1, 1934, under the caption of firm power—

Q. (Interposing) Don't you know?

A. The energy associated with firm power shall be classified as firm energy and billed according to the rates reached through agreement by the parties entering the contract for such power. For all firm power contracts hourly drafts shall be specified. Due to economies of operation, the receiving company at times may not receive its specified firm energy. In this case the receiving company shall be considered to have received the specified firm energy and the energy generated by it to replace energy to which it was entitled, but which it did not receive, shall be considered economy energy sold to the sending company. Both companies shall share equally in the savings thereby effected.

Q. Don't you know, Mr. Grimsley, as a matter of fact that by the arrangement between these three companies covered by that contract—do you say you have read it?

MR. McALLISTER: Well.

MR. PAXSON: May I finish?

EXAMINER SPENCER: Yes, proceed.

BY MR. PAXSON:

Q. That each of these parties is entitled to certain deliveries of power from the other?

MR. McALLISTER: Mr. Examiner, that question is argumentative and it seems to me that if this cross examination should proceed orderly the questions could be put without coupling into the question some form of argument.

MR. PAXSON: I wish the witness would follow that practice and counsel for the Commission yesterday and I think it would be a whole lot easier.

EXAMINER SPENCER: I think you have a right to ask that question.

THE WITNESS: That is my understanding generally.

BY MR. PAXSON:

Q. What is that?

A. I think it operates that way.

Q. That is correct?

EXAMINER SPENCER: That is his understanding.

BY MR. PAXSON:

Q. Do you know the reason for this arrangement between these three companies aside from economy?

A. I think I have a fairly good understanding of it.

Q. I would like to hear it.

A. In the agreement is set forth:

"Interconnection will make it possible to carry the loads of the three systems from less aggregate installed generating capacity, with consequent saving in investment and operating expenses, due to the existence between the three systems of a material load diversity, or non-coincidence of the times of occurrence of their maximum loads, and a material reserve diversity, or non-coincidence of the times of use of reserve generating capacity, and

"Interconnection will enable emergency conditions in any of the systems, such as breakdown of generating equipment, shortage of fuel or unforeseen increases in load, to be met with less likelihood of impairment of service to the public, and

"Interconnection will make possible lower costs of service through increased use of the more economical generating facilities and correspondingly decreased use of the less economical generating facilities, and

"Interconnection will make it possible to plan and construct future installations of generating equip-

ment in areas and places which will result in lower costs of service, and

"The parties hereto accordingly desire to effect an interconnection between their respective systems and so to establish their respective rights and obligations in the construction of the necessary facilities and their subsequent operation and use as to insure the equitable apportionment of the benefits resulting therefrom."

Q. You read that?

A. Now such studies—

Q. (Interposing) You were reading there from what?

A. From the agreement. I believe that those anticipated results have been in a large measure achieved. Some of that information was, I thought, very pertinent in the record yesterday as to how this operated.

Q. What is diversity? You mentioned diversity, rather you read about it, what is diversity?

A. Well, which diversity? I think there are two or more referred to.

Q. You know what diversity is as an electrical engineer.

A. Between systems?

Q. Yes, you don't have to read about that, do you? I think too much of your qualifications as an expert.

A. Yes, but there are other diversities referred to. I wanted to answer your question correctly and accurately. Between the two systems a peak load occurs on one at a different time than the other may have its peak and then by combining their load curves when their peaks do not coincide, their annual peaks, the resultant total of the two loads is less than the sum of the two required, therefore to carry the combined load less generating capacity at the time at the resultant peak of the two loads occurs.

Q. Exactly. Then, what you are trying to tell me, as an operating matter certain companies take advantage

of the diversity by supplying each other with energy, across state lines or otherwise.

A. That is what these three companies do, yes.

Q. And they have a firm contract to do that and each takes care of the other peak and are entitled to get it.

A. They contribute, each to the other's peak.

Q. Is it not based on the principle of diversity where one company can call on another company, their peaks being different and thereby they form a power pool?

A. You will have to read that question.

(The reporter thereupon read the pending question as recorded.)

Q. Isn't that so?

A. A few years ago that was a paramount issue. That was the all-important thing, but now we find there are other conditions that enter into the operation of such a pool that will make other economies other than generating equipment, such as being able to operate their most efficient units at the highest rate and best point, and the older machinery can lie idle and stand-by.

Q. All right, if that was the paramount reason actuating these three companies to enter into this agreement—

A. (Interposing) These things set forth some—

Q. (Interposing) You said that was the paramount reason.

A. I said years ago.

Q. You either know or don't know what was their reason.

A. I know exactly what I am talking about, Mr. Paxson.

Q. I am not saying you don't. I am trying to find out.

A. All right.

EXAMINER SPENCER: Proceed.

BY MR. PAXSON:

Q. As an operating matter agreements for such power

must be for firm power, isn't that right?

A. Not under all conditions, no. There are a great many conditions where we could not—

Q. (Interposing) Do you know of any agreement or arrangement?

A. I have studied several of them.

Q. Such as this, that doesn't call for firm power.

A. Now you have gotten away from your question, Mr. Paxson.

MR. PAXSON: Will the reporter read it?

(The reporter thereupon read the pending question as recorded.)

THE WITNESS: I know of others.

BY MR. PAXSON:

Q. What are they?

A. For instance where there is large storage of water power, it might be firm power for a few months in the year when the system operation has its peak and have no other need for it the rest of the year. In these three companies there is one, a storage plant at Wallenpaupack.

Q. Wallenpaupack is the Pennsylvania Power and Light Company and is covered by this agreement?

A. Yes, it has large—

Q. (Interposing) Would you say, or would you not when you have a systematic interchange of power they are predicated on firm commitments to interchange to take advantage of diversity?

A. Well, it is highly desirable but they don't always operate for that purpose.

Q. I don't think the answer is responsive.

A. You have it right in your Jersey Central, you know, because—

Q. (Interposing) You know this arrangement between these three is predicated on firm power.

A. Not predicated, it is one of the conditions.

Q. Well, using your own language, it is there.

Is the Jersey Central Power and Light Company part of any such system, by which I mean one that has any firm commitments for interchange to take advantage of diversity?

A. In this contract I think not, but as it operates it actually did carry part of the Public Service Electric and Gas Company peak load. It worked out that way, as I related yesterday.

Q. But it is not under any obligation to do so, is it?

A. I think there would be an obligation of this kind that would work out for Public Service in the same capacity—

Q. (Interposing) Are you talking about a moral obligation or a legal obligation?

A. I am talking about something that makes good sense and used in practice.

Q. I am asking an entirely different thing and there is no sense making unresponsive answers. I asked you whether Jersey Central was under any obligation to furnish power to Public Service Electric and Gas Company.

BY EXAMINER SPENCER:

Q. Do you know?

A. To furnish power? Yes.

EXAMINER SPENCER: The answer is it is.

MR. McALLISTER: That interchange is covered by contract. The contract speaks for itself. There is no occasion for arguing about it. Nothing the witness can say is going to alter the terms of the agreement.

MR. PAXSON: I made the same suggestion yesterday but you still let him talk about the contract.

MR. McALLISTER: I did in connection with

studies he had made. It was proper for him to relate the terms of the contract without attempting to interpret them so that he could conclude what the obligation was under the contract.

EXAMINER SPENCER: I understood him to say this particular company was not a party to the contract. Read the question.

(The reporter thereupon read the pending question as recorded.)

BY EXAMINER SPENCER:

Q. Do you know that, Mr. Grimsley, whether the Jersey Central is under obligation to furnish power to Public Service Electric and Gas Company? That is a matter that may or may not be within your knowledge.

A. The first question carried firm power.

Q. This is a different contract he is asking you about. This is a different matter.

BY MR. PAXSON:

Q. I will change the question to simple form. He says he has made a study of this system, the Jersey Central and other records, and all I asked you does Jersey Central Power and Light Company supply any firm power to Public Service Electric and Gas Company? Does it supply firm power?

A. I tried to answer that in a responsive way. It has so operated at times it has delivered. I don't believe under the terms of the contract that they are obliged to furnish firm power. That answers your question?

Q. You know what firm power is in the electrical business as an engineer.

A. Mr. Paxson, that is the term that has been loosely used and there is a great difference of opinion, and unless defined, there can be very great misunderstanding develop out of the use of the word just as you are using it.

MR. McALLISTER: Mr. Examiner, may we have a five-minute recess?

EXAMINER SPENCER: Yes, sir.

(Whereupon, a five-minute recess was had, at the conclusion of which the following occurred:)

EXAMINER SPENCER: You may proceed, Mr. Paxson.

BY MR. PAXSON:

Q. The Jersey Central Power and Light Company is not under any obligation to supply any power to Pennsylvania Power and Light Company, is it?

A. Not by contract, no.

Q. Does it supply any firm power to Pennsylvania Power and Light Company, let's get away from the legal obligation?

A. No.

Q. Does it supply any to Philadelphia Electric Company by any arrangement with Philadelphia Electric Company?

A. It is possible.

Q. I am not asking you what is possible. You made a study of this thing and I am asking you whether you know by reason of your researches and studies, whether you found any evidence that the Jersey Central Power and Light Company supplied any power to Philadelphia Electric Company by any arrangement with that company?

A. No.

Q. Or to any of these other companies in Baltimore you mentioned which I do not recall the names of, or any other company in what you call this "vast interconnected system" other than New Jersey Power and Light and Public Service, where they do supply some power?

Strike that question, I will put it again. I admit it is involved.

Excluding Jersey Power and Light Company and Public Service Electric and Gas Company, did you find in your studies that Jersey Central Power and Light Company supplied by arrangement, contractual or otherwise with these other companies, any electric power?

A. Yes, it supplies Public Service: That is one of the three, you know.

EXAMINER SPENCER: His question was, excluding Public Service and New Jersey Power and light, does it supply any current to any other utility?

BY MR. PAXSON:

Q. By arrangement with those companies?

A. No, I don't think so.

Q. You are familiar, you say, with the South Amboy plant of Jersey Central Power and Light Company, Mr. Grimsley?

A. I have visited the plant. The operating records I have studied. To that extent I am familiar with it.

Q. When did you visit it last?

A. I couldn't supply the exact date, but I think it was some time in April.

Q. Of this year?

A. Yes, sir.

Q. That is good enough. You did have a recent acquaintance with it I presume.

Now you tell us that the South Amboy plant is interconnected with the Mechanic Street Substation, that is right, isn't it?

A. That is correct.

Q. What voltage is that electricity generated at the South Amboy generating station of the Jersey Central?

A. Just a moment.

Q. Don't you know that yourself?

A. I study hundreds of them, Mr. Paxson, but I will tell you exactly.

Q. This is the case—

A. (Interposing) I am studying hundreds of power plants. No, I don't carry all that in my mind.

Q. You don't know without reference?

A. I think it is probably 13,000, but I will look it up. It is reported as 13,200.

Q. That electricity at the South Amboy plant of the Jersey Central is generated at 13,200 KV, is that right?

A. Yes, sir.

Q. Then what happens to it?

A. Well, are you concerned with all the output or that output that goes to Mechanic Street?

Q. Let us confine ourselves to that.

A. It is stepped up.

Q. I want to know about the meters and transformers.

A. It is transformed.

Q. Would you tell us this,—

A. (Interposing) Beg pardon?

Q. Tell us about the meters and transformers and trace this electricity until it comes to Mechanic Street, if you are familiar with it.

A. The transformers, I think, are located at the plant. I will verify that if you want me to do it from the records. The meter for delivery of power to Mechanic Street is located there.

Q. Just a moment.

A. Watt hour meters.

Q. Do you know where the electricity is metered that is supplied by Jersey Central to Public Service Electric and Gas Company?

A. I can give you that exactly, but as I remember it I think it is at the power plant or substation there, I mean.

Q. The South Amboy?

A. Yes, and that it receives at Mechanic Street I

think is metered at the Mechanic Street Station.

Q. Now when the electricity taken in at the Mechanic Street Substation coming from the South Amboy plant is received, what is the voltage at which it is received?

A. It is reported 26.4.

Q. 26.4?

A. We will be exact, if you wish, from our records here. We have it here somewhere, Mr. Paxson. I will be glad to supply it if you give me time.

Jersey Central Power and Light Company's report shows this voltage to be 26,400.

Q. That is what it is taken in at the Mechanic Street plant?

A. No, I didn't say that.

Q. That is what I ask you.

A. That is the rate of voltage on the line. It probably, after it leaves there, if it leaves 26.4 it probably will be a little lower at the Mechanic Street Station.

Q. I wasn't dealing in fractions.

A. There will be a difference between the voltage as it leaves the substation at South Amboy and at the point received at Mechanic Street, where it will be a little lower.

Q. We start out with this electric energy being generated at 13.2 and it is metered at 13.2 at the South Amboy plant, isn't it?

A. That again I will have to refer to, whether it is sold on that basis or 26.4.

Q. You don't know?

A. I don't remember, no, but I have been over that and the contract will disclose it. The contract refers to 26,400 volt metering equipment.

Q. Where is that?

A. Wait a minute, that is the Mechanic Street end. Wait until I find the other end. The contract in item 4

refers to such 13,200 volt meter equipment at South Amboy generating station.

Q. Then it is metered at 13.2?

A. That is correct.

Q. When it is supplied to Public Service Electric and Gas Company?

A. That is right.

Q. Then it must be transformed?

A. That is correct.

Q. And where are those transformers?

A. As I recall it they are located just outside the plant there on the ground.

Q. You have examined the line, have you, from the Jersey Central Power and Light to the south bank of the Raritan River?

A. I looked over it, Mr. Paxson, and saw it. I didn't make any inspection of the line to determine its condition or anything of that sort.

Q. Do you know how long that line is from the South Amboy plant to the south bank of the Raritan River?

A. I do not know whether the map discloses that or not, but trusting to my memory, and standing in the power plant there I asked that question I think from the dispatcher or operating engineer and they—

Q. (Interposing) You don't really know then, do you?

A. I do not know the exact length, but I think probably we have that in our records here, somewhere.

Q. We will pass that question if you don't know.

Now, Mr. Grimsley, I believe you testified, and correct me, if I am wrong, that Jersey Central Power and Light did not furnish any firm power to Public Service Electric and Gas Company, that is right, isn't it?

A. I don't think I made that statement; no, sir. If I did—

Q. (Interposing) Do you know whether if does or not?

A. I think by the records it has, yes.

Q. We are using again firm power which means called for by contract. Does Jersey Central Power and Light supply any firm power to Public Service Electric and Gas?

A. I think you have made a very different question. Not by agreement. They are not tied to deliver firm power.

Q. Do you know what kind of power has been furnished to Public Service Electric and Gas by Jersey Central?

A. It is supplied from time to time on agreed price basis, as I understand, the contract provides, the record contains the provision, I think, I again repeat, it is performing a substantial firm power service.

Q. I didn't ask you that at all.

A. You asked me if I knew what they had delivered. That is my opinion.

Q. We will approach it from another way then. Do you know what economy flow is?

A. That noise gets me.

Q. Do you know what economy flow is?

A. Yes, as a generally accepted term. That again ought better be defined.

Q. You define it.

A. This case. I understand what you mean, I think. Yes, I will answer it that way. I think, that is the power Public Service received from Jersey Central for certain periods at a certain price, when apparently that price is a little less than that which the Public Service could generate it or procure it for resulting in a cheaper cost of power to the buyer. Also there is another advantage to the seller, but I will not go into that unless you see fit and care to.

Q. What is emergency power?

A. There isn't any generally accepted definition even in the Act itself. The word is used, and I don't believe the

lawyers will even agree on that. It is generally used, I would say, in case of breakdown or power plant failure or some part of the transmission line failure which produces an emergency unforeseen. There is where I draw the line. Some have elected to carry the meaning of that word to this extent, that I may wish to take out a generator or boiler for repair, schedule it and call on you for power and call it emergency power. Some have carried it to that extent. I don't agree with that.

Q. You are familiar generally with the contract between Public Service and Jersey Central?

A. I would say I am. I have read it and passed it to others and used it for study. I may add I literally study hundreds of these. I do not retain them, but at the time I am making use of them and refer to them in the record I am making a study of them.

Q. Aren't we making use of them now? Didn't you refer to it in your testimony yesterday?

A. Yes, that had all been prepared carefully.

Q. Isn't it a fact that contract only calls for emergency power?

A. It speaks for itself. We can determine that. I don't think it was related to emergency power.

Q. It does.

A. Emergency power only?

Q. That is all the contract provides for. If you don't know, that is all right.

A. I can very easily determine that. It is no difficult thing.

EXAMINER SPENCER: I suggest that you proceed with the examination and let the question be examined later unless it prejudices your case, Mr. Paxson.

MR. PAXSON: That is all right, but so my chain

of thought won't be broken, I would rather have the answer now.

EXAMINER SPENCER: All right, we will just wait.

THE WITNESS: It is a very lengthy contract. I do not want to in this brief time give you my opinion of this entire contract. It is impossible. The services to be rendered start in the event of breakdown. It may be that is all the service this contract provided for as such. If that is true, then the way it is operated is very different.

BY MR. PAXSON:

Q. In your opinion?

A. No, as a matter of fact, of record, very different, daily delivery.

Q. Did you study the operations of the plan, did you stay there any time at the South Amboy plant and see how it was operated?

A. In a general way. I studied the records.

Q. Just the records. You don't know how the men operated?

A. No, I don't care anything about the men. I read this, the operation of it. A man doesn't need to spend all his time in a power plant to be familiar with the operations of it.

Q. Do you know how many times emergency power was taken under that contract for the year 1937 and from January 1, 1938 to March 14, 1938?

A. Oh, no, I don't know that offhand.

Q. You don't know?

A. No.

Q. You don't call that part of the operations?

A. I do know how much power they delivered each day during that period.

Q. You don't know whether emergency power or economy flow?

A. I wasn't concerned so long as it was energy sold and delivered over the line.

Q. If it flowed over the line? That is what you really mean technically there are different kinds of power.

A. Beg pardon?

Q. There are different kinds of power. Engineers talk about firm power, and economy flow and emergency power.

A. All kinds.

Q. They are different classifications.

A. We don't all agree.

Q. I don't suppose engineers agree any more than lawyers agree. You may not agree as to what is emergency or what isn't, but there are those three different kinds, aren't there?

A. There are several kinds, and after reviewing several hundred contracts, I find in more recent years when a term of that kind is used in the contract it is well defined because there have been many lawsuits and misunderstandings because those general terms were accepted in the earlier days and got in two different meanings. I am giving you that not to delay answering your question, but that is a matter of information. I would not write a contract and set forth economy power, firm power as such, without defining them. It would lead to misunderstanding. I find contracts in recent years define those things.

Q. Aside from technical definition, contractual and legal rights, don't substation operators, particularly operating men, draw a clear distinction between emergency power, firm power and economy flow?

A. Absolutely no.

Q. They didn't in the days you were in the plant, 1915 to 1927?

A. There weren't so many in use then.

Q. Maybe that is the reason for your answer.

A. No, I think, Mr. Paxson,—

Q. (interposing) Actually you don't know anything about the operations of the South Amboy station except you know quantities of kilowatt hours that flow over a line, is that it?

A. Oh, no.

Q. You can't distinguish between the types of power known by the men who really operate those stations?

A. Your question is very involved.

Q. All of your testimony—

A. (interposing) I can answer your question. I didn't understand your question. I would ask you to rephrase that.

Q. Let me put a question very simply. At least I will try to put it simply.

Your study of the operations of South Amboy Station didn't go so far as to determine to what extent emergency power was supplied or to what extent economy flow was supplied, offhand, you don't know?

A. As a matter of record there are company records. I do not know.

Q. You don't know?

A. No, wasn't interested in it, wasn't interested in that in my studies. No occasion for it. It was how much energy was delivered there. Now out of my interest in power plants I did go over the equipment and had a pretty good understanding of it and could take the reports again and have a good understanding, but what they were selling this hour or the next hour I wasn't concerned with that. It was the constant flow of energy which the records support.

Q. You were just concerned about the flow of energy?

A. I am not concerned about the plant: I have built and operated them. Operated them as plant engineer.

Q. I ask you again if you know what economy flow is?

A My God!

MR. McALLISTER: Mr. Examiner, I want to make one comment, if I may, that that term is defined in the contract and that determines what economy flow is.

THE WITNESS: Why certainly.

MR. PAXSON: Are you speaking as an engineer or as a lawyer?

MR. McALLISTER: I am speaking—

MR. PAXSON: (interposing) I am cross examining the witness.

MR. McALLISTER: I am addressing myself to the Examiner and I am suggesting that if the contract does define it that determines what it is and if the cross-examination follows that line it will be feasible, but if it barges in the open and he defines it different to the definition in the contract the answer has no relation to the subject matter of interchange or delivery of power over those lines.

EXAMINER SPENCER: My recollection is—

MR. McALLISTER: (interposing) Isn't that correct? Mr. Paxson don't you agree with that?

MR. PAXSON: I do not.

EXAMINER SPENCER: That question has been asked once before, has it not?

MR. PAXSON: I don't think I got an answer. He said there were various definitions. I am trying to get down to what substation men and practical men call economy flow. They apparently know, but technical men don't.

THE WITNESS: You can get five different definitions if you put five men on the stand here. If you

give me time I can probably find five different definitions of economy flow or economy power. I don't know of any standard.

EXAMINER SPENCER: I think that answers your question. There is no standard definition of economic flow.

BY MR. PAXSON:

Q. What is incidental power?

A. Another one of those terms.

Q. You can't define that?

MR. McALLISTER: Mr. Examiner,—

MR. PAXSON: (interposing) This man is an expert.

MR. McALLISTER: When it comes to a contract—

EXAMINER SPENCER: (interposing) This is cross examination. I don't understand the examination relates to any particular contract at this point.

MR. PAXSON: I have already brought out there was nothing in the contract—

EXAMINER SPENCER: (interposing) There has been testimony to the effect there has been current flowing over these lines. I think the proper inquiry may be made as to what kind of current goes over that line on this cross examination. You may proceed, Mr. Paxson.

THE WITNESS: I think I would like to say here that the energy that is being delivered by the Jersey Central to Public Service could not be regarded as emergency power. I don't think it possibly could be. Emergency power,—now if you want me to go back to the definition.

BY MR. PAXSON:

Q. We are talking about incidental power.

A. Incidental power is another one of those terms there is no standard definition for. If I were using it in a contract I would define it. It is the only safe thing to do.

EXAMINER SPENCER: Proceed.

BY MR. PAXSON:

Q. Do you or do you not know whether all of the power flowing over the line between South Amboy station and Mechanic Street Substation is either emergency, economy flow or incidental power?

A. You will have to broaden that question.

Q. I am asking you whether you know or don't know?

A. I can get two or three different interpretations of the meaning of that question. Now as to what the parties to this contract call it, I don't know that.

Q. You said you know that certain amounts of power are delivered?

A. Yes, sir.

Q. I am taking exception to the use of the term delivered.

EXAMINER SPENCER: You would not take exception to it if you were using it, would you?

BY MR. PAXSON:

Q. I am now asking him does he or does he not know whether all the power that flows over this line is emergency, economy flow or incidental power. Now he can yes or no.

A. No, I can not.

Q. You don't know?

A. No, I didn't say that. I told you what I believed it was.

Q. Well, I don't care about the belief.

A. You are getting terribly involved.

Q. You have come in here and given a lot of expert testimony.

A. Yes, sir.

Q. And gave a lot of data. I want to see whether you really have studied this plant and know something about this operation.

A. You put an expert question and I will answer it the best I can. It is my desire to help you.

Q. I am trying to get the facts because grave legal consequences may flow therefrom. You don't know?

A. I don't care what they call it or bill it, no.

Q. All right, that is all I want to know on that, then.

EXAMINER SPENCER: Proceed.

BY MR. PAXSON:

Q. Are you familiar with the Atlantic Street Substation of the Staten Island Edison Company?

A. No, sir; I only know from records.

Q. You only know from records?

A. That is correct.

Q. Do you know what type of power Staten Island supplies to Public Service Electric and Gas? Is it firm power?

A. I would have to refer to the contract, Mr. Paxson.

Q. But you don't know at this moment without reference?

A. Not offhand, no. Well, in the first paragraph it starts off and says shall continue to be interchanged, and I will go on down into the contract: From the Staten Island Edison Corporation I read into the record yesterday a statement as to capacity now.

Q. I am not asking that.

A. Wait a minute.

Q. As soon as I ask you a definite question, Mr. Grimsley, you want to give me a speech. I will never get any kind of a record here if I have got to listen to general talk.

A. I want to assist you all I can, Mr. Paxson.

EXAMINER SPENCER: All right, proceed, Mrs. Grimsley.

MR. PAXSON: All right. I know you do.

THE WITNESS: This contract refers to emergency power, to economy energy and incidental energy.

BY MR. PAXSON:

Q. Those terms—

A. (interposing) Were used in the contract.

Q. Are in that contract, but they don't mean anything to you?

A. No, not as such.

MR. PAXSON: Now, if the Commission please, I suggest we recess for the day. I have an appointment with Mr. Koplowitz and I have to go back to my hotel to get some papers before I meet him.

EXAMINER SPENCER: Shall we recess until 10 o'clock tomorrow morning?

MR. PAXSON: Ten o'clock.

(Whereupon, at 4:40 o'clock p. m., the hearing in the above-entitled matter was recessed until 10:00 o'clock a. m., Thursday, September 29, 1938.)

Washington, D. C.,
Tuesday, September 29, 1938

The above-entitled matter came on for hearing, pursuant to adjournment, in Room 1201, Hurley-Wright Building, 1800 Pennsylvania Avenue, N. W., Washington, D. C., at 10:00 o'clock a. m.

Before:

Carroll B. Spencer, Trial Examiner.

Appearances:

As heretofore noted.

PROCEEDINGS

EXAMINER SPENCER: The hearing will come to order. When we recessed yesterday Mr. Grimsley was on the stand, I believe, on cross examination.

Mr. McAllister, do you have a copy of yesterday's record?

MR. McALLISTER: Yes, I do.

EXAMINER SPENCER: May I see it?

MR. McALLISTER: Yes, sir.

EXAMINER SPENCER: You may proceed, Mr. Paxson, with your cross examination.

Whereupon

A. H. GRIMSLEY

the witness on the stand at time of adjournment, resumed the stand and testified further as follows:

Cross Examination (continued)

BY MR. PAXSON:

Q. Mr. Grimsley, I would like to take up with you this morning, the first thing, Exhibit No. 1.

Have you got Exhibit No. 1 before you?

A. Yes, sir.

Q. Now, Mr. Grimsley, will you tell me again just how this map is prepared? I don't know that you have ever told me. I would like to know.

A. It was taken from the maps of the respective companies which they filed with the Federal Power Commission.

Q. And I thought you stated in answer to a direct question by Mr. McAllister that it was taken from the maps furnished by the various utilities together with their annual reports to the Federal Power Commission.

In other words, what I am trying to get at is this map a cross-patch work, composite picture of a number of maps submitted by different utilities in the United States, of course, within this delimited area, plus data you pulled out from their reports to put on the map?

A. Well, it is just what I stated before. These lines, location of power plants, voltages of lines, and so on, was taken from the maps of transmission lines, and substations and power plants that have been filed by the various companies with the Commission. They are official maps.

Q. But someone takes those maps and makes up a map of his own? I just want to know.

A. That is correct.

Q. It purports to be prepared by the Bureau of Engineering of the Federal Power Commission. I have no doubt that is true.

A. That is correct.

Q. You are not endeavoring to show here any of the companies outside of New Jersey as to their area and territory, are you?

A. Oh, well, only so far as this system network I was referring to, the important connections.

Q. What do you mean by this system? You are not talking about the Jersey Central Power & Light System, are you, by any chance? That is the label on the map.

A. Yes, I meant to include, and there is included that part of the Jersey Central Power & Light Company that was being studied, which is a big part of this large network.

Q. You mean the power pool we discussed yesterday.

You raised some question with me yesterday, Mr. Grimsley, and I will admit you put some doubt into my mind as to whether or not you had used the words interconnected system. Reading the transcript last night I found you had used them. I don't know whether you have read the transcript or not, but if you object to my using them I will try to use something else.

A. Well, it is the interconnected system which in my testimony I referred to back in 1927 when these three major companies deemed it advisable and wise to connect up their facilities with a heavy transmission line. I believe it was one of the first 220 KV lines constructed in the East, heavy transmission, which gave them the advantage of such economies, use of power plant facilities, such as I read into the record from the contract or agreement yesterday afternoon.

Q. I don't want to take you all over that again, Mr. Grimsley.

When you talk about interconnection, this map is labeled principal lines and plants of Jersey Central Power & Light Company and interconnected systems. Of course the great, big interconnected system is this power pool you have labeled and referred to where we have to put the Jersey Central & Light Company's name on it as though that was the one that controlled the whole show, the orchestra leader. I think you gave us a little description of everything going into and keeping in step.

There isn't any reason for labeling this Jersey Central Power & Light Company an interconnected system.

A. I think so.

Q. Is the Jersey Central the orchestra leader you referred to?

A. A very good reason which I shall try to explain to you. These three major systems form really the backbone of this set-up. Now by their agreements with each of the three large companies, it makes these other companies

or draws these other companies into a large power pool. A second agreement, a third agreement can be two or three steps from the major ranking system. Yet, they have seen fit to connect their facilities and therefore they become a part of this large pool, or the pooling of these facilities of the larger companies.

Q. You now class it all a pool?

A. Sir?

Q. Are you still insisting Jersey Central Power & Light Company—now you are an expert?

A. Yes, sir.

Q. Are you still insisting Jersey Central Power & Light Company is a part of what is commonly known by engineers and is understood by lawyers and everybody in the electric utility business as a power pool?

A. I meant to make it very clear, as it is appearing, supported by the records we studied, is a part of this power pool.

Q. That is your opinion?

A. In my direct testimony I showed that they carried part of one of the major company's annual peak load, using its facilities to do that to the extent of 9,000 KW, so it becomes a part of this large pool. This pool can be extended on further westward through Pennsylvania and south through Maryland.

Q. Although they have no contractual relations with members of the pool?

A. But the respective members of the pool by their connections and contracts bring in the other utilities and they become a part of the major power pool. They all operate in synchronism.

Q. All right, we will get to that. I want to talk about this map a little further and take it up in more detail.

Just what is your purpose in putting in this map? This is not supposed to be in any sense technically cor-

rect, but is supposed to paint a picture? I just want to get your idea.

A. To give a very good understanding of this network, the colors were used to distinguish the various areas that these companies served in New Jersey, to give all who are interested in this a very good understanding of the network I was discussing. That is what we had in mind.

Q. In other words, the important thing where these black lines show electrical lines you want to show a general tie-up?

A. Yes, and location of the power plants.

Q. I merely ask you. I just wanted to see to what extent they could be relied on and what the purpose was, if it was a general picture trying to give your impression of how these lines are, or the impression of the men who drew it, that is one thing.

It does have a legend that you presume to give voltages. I presume unless I take up this matter the Commission may be inclined to take this as correct.

Now you have the map before you?

A. Yes, sir.

Q. You have a black line between Perth Amboy and South Amboy showing an interconnection. That is right, isn't it?

A. Yes, that is correct.

Q. Compare that black line with the legend and tell me what the voltage of that line is as shown by the legend.

A. The heavy black line on the legend shows a 220 KV line and they are so designated.

Q. I don't want to quarrel with you and I hope—

EXAMINER SPENCER: (interposing) Don't argue with the witness and the witness don't argue with the attorney. Please ask questions and answer them.

THE WITNESS: I am trying to answer. There was a 132 KV line.

MR. PAXSON: Will you read the question? I want to get this in,—

EXAMINER SPENCER: (interposing) Read the question, Mr. Reporter.

(The reporter thereupon read the pending question as recorded.)

BY MR. PAXSON:

Q. If you want me to explain that, I will. I don't want to confuse you. You are an engineer, and I want you to take this map, look at the map and look at the line between Perth Amboy and South Amboy and tell me what the voltage is. I don't want you to describe everything else.

A. The legend very thoroughly states there that lower voltage circuits, the voltage is not given below that of 66,000.

Q. Don't you understand, Mr. Grimsley?

A. I thought I did and I think I answered your question.

Q. I want you to read this map.

A. This map does not state the voltage of that line.

Q. It doesn't, then the legend doesn't mean anything, not over your electric line voltage, 220, that doesn't mean anything?

A. It means there is a direct connection there, yes.

Q. Again I ask you to look at the black line showing the interconnection between Perth Amboy and South Amboy without any reference to any knowledge you may possess, and tell me what the map indicates as to voltage.

A. Shows these systems are connected by transmission line, but does not show the voltage. The idea was to cut out all of the details not concerned with small lines. In other words, it would be almost impossible to show all

the transmission lines and their voltage on a map of this scale.

Q. Then you don't hold any brief for the accuracy of this map, is that what you mean?

A. No, I do not mean that. I mean it shows definitely.

Q. It might be 220 or 110?

A. No, if it were that, it would be so labeled.

Q. You told me it wasn't.

A. It says lower voltage circuits there are indicated by this black line.

Q. This is just a question of eyesight?

A. Yes. I confess I don't know what you mean.

Q. Mr. Grimsley, you can certainly read a map. I know you can. I think you make difficulties out of simple problems, always afraid I am going to lead you into something but I merely ask you to interpret this map. I am perfectly satisfied.

A. I did.

Q. I am trying to bring out inaccuracies.

MR. McALLISTER: I think he has said it is not an inaccurate map. I think you are trying to argue with the witness and I don't see any necessity for pursuing questions when the witness has already answered.

EXAMINER SPENCER: Proceed, Mr. Paxson.

MR. PAXSON: I insist on bringing this out, what this map shows the voltage to be.

EXAMINER SPENCER: You may ask questions pertaining to the map.

BY MR. PAXSON:

Q. If you tell me this legend means nothing I will drop both questions.

EXAMINER SPENCER: We won't ever get a record made if we just argue about it. If you ask

questions I will see that he answers them.

THE WITNESS: I have stated—

EXAMINER SPENCER: Just a moment, Mr. Grimsley, let him ask you the question first.

MR. PAXSON: All right, Mr. Examiner.

EXAMINER SPENCER: Proceed.

BY MR. PAXSON:

Q. You have the map before you. You see that dark line between Perth Amboy and South Amboy which shows an interconnection?

A. Yes.

Q. I am not quarreling that shows an interconnection.

A. Yes.

Q. What is the voltage of that line as shown by the legend on this map?

EXAMINER SPENCER: Can you answer?

THE WITNESS: I have answered twice the voltage is not shown on this map.

BY MR. PAXSON:

Q. Then, Mr. Grimsley, these lines which are drawn on this legend with certain characteristics are to be discounted and not part of this exhibit?

A. Not in the least. They were supported by direct testimony yesterday and upon cross examination. There is in the record on several occasions the voltage of that line as taken from the Jersey Central's own report. It appears in the record several times.

BY EXAMINER SPENCER:

Q. Mr. Grimsley, the size of that line about which he is asking you, now, does not show the voltage according to the legend? In other words there is nothing in the legend to indicate the voltage of that line by the size of the line itself?

A. That is correct.

BY MR. PAXSON:

Q. Then this second line on the legend with the figures 132 over it, reading 66 KV circuits to 132 KV, figures indicates thousands of volts, that just means nothing?

A. It means just what is shown there. It says 132 and it says 66 and is so labeled on the map.

Q. All right. If you will compare that line No. 132 with the black line between Perth Amboy and South Amboy they are exactly the same, aren't they? Would they not make any reasonable man think that interconnection was anywhere between 66 and 132?

A. I don't think any engineer would misunderstand that, Mr. Paxson, because the voltage is not labeled, the voltage shows below 66,000 volts of such lines down to 22,000, and are shown the same way.

BY EXAMINER SPENCER:

Q. Mr. Grimsley, let me ask you, the line from South Amboy to the Raritan River is marked 66,000. That line is supposed to correspond with the line in the legend that has 132 over it, is that correct?

A. That is correct.

Q. Would it follow any line on the map the same size as the one that has 132 over it would be a line of 66 to 132?

A. No.

Q. That would not necessarily follow?

A. No.

Q. In other words the legend doesn't necessarily mean the lines on the map which appear to be the same size as those in the legend have the voltage indicated by the line in the legend?

A. Not necessarily.

Q. Unless marked?

A. That is correct.

EXAMINER SPENCER: Is that satisfactory?

MR. PAXSON: Yes, that is satisfactory to me. If anyone were studying the map it would indicate a 66 KV interconnection and Mr. Grimsley has already testified it was quite different.

EXAMINER SPENCER: All right, proceed.

BY MR. PAXSON:

Q. In cases where the voltage is indicated on the map in figures, are we supposed to take that as authentic?

A. That is my understanding. There may be errors. There may be.

Q. Do you know the voltage from South Amboy to Whippany in New Jersey? What voltage is shown on the map here?

A. That is one that is marked. It is shown, the northern part of the territory is 33 KV and I am inclined to think that there is a 66 KV line running up there. We can take their official map and clear that up for the record.

Q. I am perfectly satisfied if you will tell me, Mr. Grimsley, that you don't want the Examiner and the Commission to take these indicated voltages as correct and accurate. I am perfectly willing to drop the whole matter. I don't want to delay and waste time, but if you say they must take it, I must show the inaccuracies, as I know there must be.

A. I will be delighted to collaborate and cooperate and if there are any errors, correct them.

The map submitted by Jersey Central Power & Light Company of electric transmission lines with revision dates brought down to February 17, 1938, indicate two circuits of 66 KV from South Amboy to the Whippany plant. The report, F. P. C. No. 1, in which all transmission lines are supposed to be listed, does not support that all the way to the Whippany plant. There is shown from South Amboy

to Chatham, 66 KV, and to Cheesequake, and from Chatham to Delaware Lake Substation, 66 KV, from Morristown to Whippany, 66 KV, and Summit to Whippany 66 KV. I believe with more time, this list here of transmission lines may support the 66 KV line shown on the map from Chatham to Whippany by successive districts or divisions. They seem to be shown here in the report.

Q. As I understand it, this map submitted by Jersey Central is the map you used in making one part of this composite picture and shows that the voltage is 66 KV from Whippany to South Amboy, is that right?

A. It is there.

Q. And you are not sure whether the report submitted to which you refer supports the map or not? Is that your conclusion?

A. I do not like to reach a conclusion on short time.

Q. I am saying you are not so sure. You have not reached any conclusion.

A. No. I might say I am not sure now but what there might be some 33 KV lines in there, as is shown and the 66 may have been omitted. I don't know the situation until we check it up, but in any event the records show they are physically connected with the transmission line, the two sections referred to, served by the company in New Jersey.

Q. With that statement I presume I will have to explore a little further. I was thinking I was going to drop this thing.

You have no doubt this is a 66 KV line, but the figures 33 are incorrect?

A. May I make my position a little clearer in answering your question?

Q. You are certainly entitled to answer the question. Go ahead.

A. As I stated before, I consulted this map, and I was over part of this territory and I was of the opinion

I recalled the 66 KV line, and that has proved to be correct. I am not sure, however, but what the 66 KV line on the official map may have been omitted here in some places. There may, in other words, be 66 and 33. That is the point I want to make clear, but I think we can determine that in a very few minutes from these records.

MR. PAXSON: Mr. Examiner, I think this is quite important. I must have the physical facts if we are going to determine whether we have an interconnection, an interconnected system. It may seem tedious, but we have a lot of engineering theory propounded and offered. I am trying to bring out the facts.

EXAMINER SPENCER: You may proceed.

BY MR. PAXSON:

Q. This, as you say, from your own examination and physical inspection, you know there is a 66 KV line from Whippany to Perth Amboy, is that correct?

A. Yes, sir.

Q. Do you know from your inspection whether the 66 KV line in question is directly connected to any other electric system, or is it not?

A. I use 66 there.

EXAMINER SPENCER: (interposing) He said do you know from your physical examination and inspection whether the 66 KV line in question is directly connected to any other electric system or not.

BY MR. PAXSON:

Q. That is directly connected to any electric or operating system?

A. I do not believe there is unless it has happened, unless it has been constructed since I was there, and I had the understanding as the agreement I read yesterday indicated, that probably the 66 would be extended to Boon

ston or West Wharton to strengthen the tie-up with the New Jersey Power & Light Company.

Q. Now directing your attention to the top of the map, the line from Peckville to Wallenpaupack, what is the voltage of that line? Do you find the place I am referring to?

A. I haven't found it.

Q. Do you know where that interconnection is? You have the word "Scranton" and "66 KV," and to the east of that the word "Wallenpaupack," that line is shown at what voltage?

A. 110 KV.

Q. Do you know whether that is correct or not?

A. I do not.

Q. You don't know that is a 66 KV line?

A. I do not. That can be verified very quickly from the records from which this was taken.

Q. Now going a little further and taking the line from Hauto to Sigfreid, what does that map show the voltage to be?

A. This shows 110 KV from Hauto to Sigfreid.

Q. Do you know that system over there?

A. I have been over part of that, yes, but I don't know whether these voltages are correct. I can verify it from the company records.

Q. You don't know that is a 66 KV line?

A. I do not, but it can be easily determined. The records can show that from the company records.

Q. Mr. Grimsley, what do you mean by an interconnection?

A. A physical connection of transmission facilities.

Q. Do you distinguish between connection and an interconnection?

A. I don't see any difference.

Q. You don't distinguish between them?

A. I do not. The interconnection is more generally used.

Q. Yes.

A. To indicate a physical connection.

Q. So when you talk about an interconnected system it may be connected, but not necessarily interconnected? I mean, you just use the term generally.

A. I don't mean to reach the conclusion that you have just stated there. I think they are used occasionally synonymously, or meaning the same thing.

Q. Now, Mr. Grimsley, I assume this was an error, but I note in the record that you made the statement the Raritan River, that is on page 24 of the record, you made the statement that the Raritan River and Camden plants of 60 and 50 thousand kilowatt capacity respectively, are the main sources of energy for this company, and you were referring to the Jersey Central. You don't know of any Camden plant Jersey Central owns and operates, do you?

A. Camden plant?

Q. Camden, you know that Camden is

A. (interposing) Jersey Central has no plant in Camden.

Q. I was born there, and I know there isn't. It is too near the line. I don't believe you even said so and I would not want the record to show it. It is too near the state line.

A. If you will permit me, Mr. Paxson, I can look at my record of direct testimony and clear that up. I certainly didn't mean to say that because they are not in that area.

Q. I think it was either a slip of the tongue or an error of the stenographer. It is wrong.

A. Yes.

Q. And Jersey Central has no plant located in Camden, New Jersey?

A. It doesn't show any and I am sure they haven't such a plant.

Q. Now then, Mr. Grimsley, in talking the other day about the interconnection of Jersey Central Light & Power Company you stated, you referred to the South Amboy interconnection and then you said that the second important interconnection between these two systems, meaning Public Service and Jersey Central, is at Wrightstown and New Lisbon, New Jersey. There is no interconnection at Wrightstown and New Lisbon in any technical sense, is there? If you were just using it synonymously, I don't care.

A. The word important as was used was not intended to convey magnitude, but they are important connections because, as will be observed from the map, that this area served there is dependent upon a single transmission line from Hightstown, a distance of considerable mileage. Should that fail then these connections are very important. The customers will continue to be served there, but it was not intended to convey it was a big operation such as in the area of South Amboy.

Q. You were talking about a very broad brush. You were talking about three important interconnections.

A. I regard the service to a small community as being important.

Q. When you were talking about the broad brush of this gigantic power pool it fades into insignificance, doesn't it?

I don't think you answered that last question.

A. There is a little discrepancy between two reports of Jersey Central. In the form 64 the transfer points are shown as New Lisbon and Wrightstown. There is in the annual report, F. P. C. I—

Q. (interposing) I just want to know what these reports are. Are these both reports of Jersey Central?

A. Yes. In this latter report the points of receipt are shown as Comical Corners and Wrightstown.

Q. Have you been over that line?

A. Beg pardon?

Q. Have you been over that line?

A. No, I was not over that section.

Q. So you have to take your information from the reports and don't have any personal knowledge of it?

A. Yes. However, I did make this study at the Burlington plant of the Public Service as shown in the exhibit and this territory, and discussed the feeders and lay out there between Burlington and Camden, the connection with the Philadelphia Electric, and this particular area we are discussing, but I didn't get nearer to Wrightstown than Burlington, but was shown their maps which showed these lines out to Wrightstown and that area.

MR. PAXSON: I might say for the Examiner's attention I am glad that Mr. Grimsley brought out the fact when he referred to these company reports filed with the Commission for one purpose there are apparently discrepancies between them and it shows the value of such testimony.

MR. McALLISTER: This is all argument.

MR. PAXSON: I think I have a right to bring that out. We don't follow the strict rules of evidence here.

MR. McALLISTER: There is an appropriate time to make whatever argument you care to showing that all the witnesses in one report testify the connection is at Wrightstown and Comical Corners, and the others Wrightstown and New Lisbon.

EXAMINER SPENCER: The Examiner heard the witness and you will have an opportunity to read

the record. You may proceed with your cross-examination.

MR. PAXSON: Pardon me?

EXAMINER SPENCER: You may proceed.

BY MR. PAXSON:

Q. I still want to confine our attention for the time being to this connection. I call it a connection. Probably you agree with me.

Does the term interconnection, I get back to my original question, appeal to your scientific mind as having any technical significance different from connection?

A. Well, as the various companies report this data and designate these points—

Q. (interposing) Pardon me, I don't think the report has anything to do with it. If it doesn't mean anything, say so.

A. For this discussion I don't elect to make any difference.

Q. All right, how does power flow, in what direction through that connection?

A. The Perth Amboy?

Q. No, I am talking about this connection loosely designated at Wrightstown and New Lisbon, although I think the real point is Conical Corners. There is a connection there?

A. Yes.

Q. We agree with that?

A. Yes.

Q. Both sides agree?

A. Yes.

Q. I am asking whether there is any interchange of power over that line there?

A. My testimony showed I think for the year 1937 that the power is there purchased by the Jersey Central

and I do not recall that they have delivered any back to the other company. Of that point, however, I will not be sure, but could make a definite statement by looking at the reports given. That is my recollection.

Q. That, I think, was your testimony and you stated correctly it only flowed one way?

A. Yes, sir.

Q. And it is because I, and some engineers to whom I have talked to, do give a technical significance to the term interconnection, but I wanted to bring out clearly the power only flows one way.

A. I know of no reason why it should not flow the other way. There may be some, but the data we have here do not show whether there is any reverse power relay, or switches to prevent that.

Q. Do you know whether if flows both ways or not?

A. No, I think it is possible.

Q. You can't say that unless you have some data?

A. Yes.

Q. You say it is possible to flow. You must know something about it.

A. I make that statement advisedly because the system is interconnected at these two points here we are discussing to the Mechanic Street Station. So, I made that qualifying statement and I see no reason why it could not flow, unless by some predetermined reason methods have been used to prevent it.

Q. But you haven't really studied that line personally in any way so you could say it could flow in both directions or not at that point?

A. I would answer that I have not.

Q. If the lines connecting at Wrightstown and New Lisbon and on up to Hightstown, New Jersey, were not operated in parallel then you would agree power could not flow over that line?

A. If normally there is a switch in that line that

is open, then it would be cut off from the Jersey Central Power & Light Company supply, its generating plant, that is obvious.

Q. I say if they were not operating in parallel or in synchronism the same answer holds?

A. Through this section?

Q. Yes.

A. Yes, that is correct.

Q. What do you mean by operating in parallel and in synchronism?

A. That is where two or more generators or two or more power plants are connected, the circuits, they are operating in what we call step, in perfect synchronism, all turning together.

Q. You mean they all turn if they run at all, but they might not be in synchronism?

A. Pardon me?

Q. They all turn in the sense of going around, but that would not be necessarily synchronism?

A. They must be in synchronism if they continue to operate connected through busses or transmission lines, they must necessarily, if they are connected, operate in step, in synchronism.

Q. Taking this connection down at Wrightstown, would we have a connection there without it being in synchronism?

A. If, as I said, those lines were open leading back up to the main system of the Jersey Central, and if you wish me to, I might express an opinion as to that line. I don't think these two systems, if the connection were open between South Amboy and Mechanics Street and this circuit down through Hightstown and Wrightstown were closed, I don't think through that small line these two systems would ever operate in parallel. If that helps you.

Q. Did you say you did make a survey of the Wrightstown and New Lisbon area or not? Did you say you did

make a personal survey of the Wrightstown and New Lisbon area or not?

A. The nearest I got there was in the Burlington plant and vicinity.

Q. If you didn't make a survey—

A. (interposing) The survey I made was from records.

Q. Yes.

A. That is correct.

Q. Now then, Mr. Grimsley, I believe you testified yesterday that the third important interconnection of Jersey Central with other electric utilities is that between its Boonton substation and West Wharton Substation of New Jersey Power & Light Company.

Where is this interconnection?

A. The map of the Jersey Central Power & Light Company shows the connection at Boonton.

Q. That is in the north central part of New Jersey or approximately?

A. Yes, sir.

Q. Do you know whether this connection has been open or closed? Is it an open or closed connection?

A. When I was there, I think in April, it was open. I did get some data there from the field man. In case of failure, one important failure there, where I think Morristown was out, the connection was used to pick up that load. The contract, as I said yesterday and the day before, indicates the intention to make some substantial or important connection there.

Q. Some time in the future?

A. Well, I am not sure but what construction has been started.

Q. You don't know whether it had or not?

A. No, I do not.

Q. Then, we don't have to discuss it. The contract is there, whether you and I agree is not important when

the Examiner reads it.

A. No, that can be determined later.

Q. Don't you know that at Boonton, New Jersey, that switch is always open except in emergency?

A. Well, I haven't definite knowledge of that, Mr. Paxson.

Q. You don't know that?

A. No.

Q. Assuming my statement to be correct, that it is always open except in emergency, then you would not call that an important interconnection with this power pool, would you, of which you speak?

A. There again the point arises, the term you have used; the emergency. Yes, I regard it as a very important connection and I believe that it will be important, and it is advisable and I think the terms of the contract have shown the wisdom of the company in that respect and it will become important.

Q. I am not interested in the future just now. I am trying to determine the public utility status of a certain company.

A. I regard it,—

Q. (interposing) Go ahead and answer the question.

A. I regard it as an important connection. If it were my property I should so consider it.

Q. I thought you told me a while ago when switches were open it didn't operate in parallel or synchronism.

A. I did. That is impossible when switches are open to operate in parallel.

Q. Let's approach this proposition in another way. Do you know how often that switch was closed, if at all in the first three months of 1938?

A. I do not know how often.

Q. Do you know how often it was open or closed in 1937?

A. No, sir.

Q. Or 1936?

A. No, sir.

Q. You don't know anything about the times or occasions or circumstances when power flowed over that connection?

A. Not times, other than as I related. I do know it did serve the Morristown area on one occasion recently. I know that only by the district manager so telling me.

Q. Morristown of course is in New Jersey?

A. Yes.

Q. In whose operating territory is Morristown?

A. Beg pardon?

Q. In whose operating territory is Morristown?

A. Why, the Jersey Central, according to the map, and I would have to check my notes on that. I think that is the office I visited where I discussed this with the district manager.

Q. Now on page 42 of the record it appears Jersey Central, it appears that you said that Jersey Central under its contract with the New Jersey Power & Light Company pays a demand charge of $2,500 per month. That isn't true. You did say as I recall it, $25.

A. I don't remember what I said but I will be glad to check it.

Q. I am not charging it is attributable to you. I just don't think you said so.

A. I don't know, but by referring to the contract we can certainly get the record correct.

Q. I really don't think we ought to waste any time over there. The contract speaks for itself. I think unquestionably it is an error.

Now then, Mr. Grimsley, it is true, is it not, that Jersey Central facilities do not cross any state line to your knowledge?

A. Its facilities?

Q. Yes, or its lines.

A. It does not.

Q. Has no line or facilities at a state line?

A. No.

Q. Crossing or up to the state line?

A. No.

Q. Now, Mr. Grimsley, you made the statement yesterday that the Holland plant or the Gilbert Station, I guess they are just two names applying to the same station.

A. That is my understanding.

Q. The Holland plant or the Gilbert Station is out of operation at certain times during the year. That is correct, isn't it?

A. Yes.

Q. You then followed up that statement with the remark for that reason, I am just paraphrasing what you said and if I am wrong, correct me, that the system has for such periods entirely depended on outside sources of supply. The record attributes that statement to you.

A. Yes, sir.

Q. What do you mean by outside?

A. Sources of supply other than that owned by New Jersey Power & Light. I think I made the exception of that little hydro plant.

Q. That is correct, yes, but that is very insignificant. You said aside from that.

A. That is what I meant to convey.

Q. By outside, you mean outside of its own facilities?

A. That is correct.

Q. It might come from facilities of some other company in New Jersey?

A. Could come from New Jersey, New York or Pennsylvania.

Q. You don't mean to imply it necessarily came from outside the state?

A. No, sir!

Q. I just want to make that clear.

MR. McALLISTER: Mr. Paxson, we now have the contracts that will enable the witness to clear up that question about the demand charge, if you care to pursue that question so it will appear at the proper place in the record, and I may say that the contracts do show that is $2,500 per month demand charge and I think that was the statement of the witness on direct and the contract supports it.

MR. PAXSON: I am not quarreling with that. If he says it is $2,500, the contract will speak for itself.

THE WITNESS: I think I said $2,500.

MR. PAXSON: I thought you said $25.

MR. McALLISTER: He said $25 and then corrected it to $2,500.

MR. PAXSON: If the contract says that, then we are bound by it.

MR. McALLISTER: That is my statement. Unless you wish to accept it I will show you the contract.

THE WITNESS: I find my statement was $2,500 per month.

MR. PAXSON: I wasn't disputing it. I just wanted to be sure about it. But I see you are quite correct from Article 4 of this contract.

MR. McALLISTER: That is the contract of February 6, 1937.

BY MR. PAXSON:

Q. Article 4 of this contract dated February 6, 1937, states that "Jersey Central agrees to sell and power con-

pany agrees to purchase firm power in certain amounts and pay demand charges of $2,500 per month."

Of course in connection with that I must also refer to the fact in Article 6 of the same contract it is provided "It is agreed, however, between the parties hereto, that the minimum charge for firm power as outlined in Article 4 shall not be made effective until a new interconnection is established between the systems of the power company and the Jersey Central."

And, there is no new interconnection that you know of, is there, Mr. Grimsley?

A. I believe that I made that statement top yesterday.

Q. I think that is correct. All right, I guess that clears that up.

Now getting back to the Holland plant, do you know when or at what periods of time the Holland plant is out of operation?

A. No, I do not.

Q. You were just giving the maximum figures for the year?

A. As the company reported them.

Q. That might be split up into a number of occasions of a few minutes each or a few hours or days?

A. That is correct.

Q. Now when the Holland plant is out of operation for emergency purposes, we will say for maintenance or repairs, does that affect Jersey Central in any way?

A. Well, I think it could.

Q. Well if the switch is open at Boonton it would have no effect on Jersey Central?

A. Yes, but it could be closed and the Whippany plant could be used and it would be good business.

Q. But you don't know if it was ever closed when the Gilbert plant was out of operation?

A. I do not know that. The company's record will disclose that.

Q. The Holland or Gilbert plant is connected with Public Service Electric and Gas Company at Roseland, isn't it?

A. That is correct.

Q. That is a pretty important station, that Roseland, isn't it?

A. Very.

Q. Now then, let's turn our attention for a moment to Exhibit 6.

You have here an exhibit which is arranged, I believe in columns with the names of companies in column 1 down the side and the other being at the top. From the use of the language there I find it difficult, and I think possibly the Commission may, as to just how to read this exhibit.

When you start with Jersey Central Power & Light Company and we go over into the column Public Service Electric and Gas Company, purchased from and sold to, I don't know whether from the use of that language Jersey Central Power and Light Company purchased from Public Service Electric and Gas 1,554,000 or whether you mean Public Service purchased from Jersey Central 1,554,000.

A. It reads across.

Q. It reads across?

A. Yes, sir.

Q. In other words the four companies listed here you go across. The use of the word purchased from don't refer to the names on top?

A. No, for example take the year 1935.

Q. Just take one example.

A. Yes.

Q. I am not making any point except to get it clear.

A. That is right. It indicates Jersey Central pur-

chased from Public Service that year 1,554,000, and sold to Public Service 56,344,000 and so on across.

Q. Now let's look at Exhibit 7.

BY MR. McALLISTER:

Q. Mr. Grimsley, I would like to clear that up. You said for 1935. You read figures for 1934. I think that ought to be straightened out so there will be no question about it.

MR. PAXSON: I agree with you.

THE WITNESS: That is true. It is the wrong column. The figures seem to be dropped to the eye, but by putting a line on it the figures I read are for the year 1934.

BY MR. McALLISTER:

Q. Otherwise your answer is correct?

A. Yes, sir.

BY MR. PAXSON:

Q. Now I want to question you about not only Exhibit 7, but about Exhibits 2, 3, 4 and 5, because in your testimony yesterday you offered them all together.

Have you Exhibits 2, 3, 4 and 5 before you?

A. Yes, sir.

Q. Mr. Grimsley?

A. Yes.

Q. On page 89 of the record you make this statement:

"And those exhibits show the operating utilities in New Jersey import as well as export energy to the adjoining states."

Did you mean to convey by that statement, since Exhibit 2 is labeled Jersey Central Power & Light Company, that these statements show that Jersey Central imports as well as exports energy to the adjoining states?

A. I would have to go back to the record.

MR. McALLISTER: Have you got that record? I just didn't get that question, Mr. Paxson.

EXAMINER SPENCER: Do I have your record, Mr. McAllister?

MR. McALLISTER: I have another copy. This is the record of the day before, Mr. Examiner.

MR. PAXSON: If you want to look at it, here it is.

MR. McALLISTER: I have a copy, but I don't see anything that coincides with what you have read, Mr. Paxson.

MR. PAXSON: May I point it out?

MR. McALLISTER: Yes.

MR. PAXSON: Here it is.

MR. McALLISTER: Is that question you are referring to and not an answer?

MR. PAXSON: He goes along with your question.

MR. McALLISTER: The way it was put, I thought it was part of the answer.

MR. PAXSON: Are you going to withdraw that question?

MR. McALLISTER: No.

THE WITNESS: What is that?

MR. PAXSON: You will have to go back and read—off the record.

(Discussion off the record.)

BY MR. PAXSON:

Q. Do you want to accept that statement as correct?

A. I don't know what it relates to. I am trying to pick up the idea in the record.

MR. PAXSON: Suppose we take a recess. We haven't had one this morning.

EXAMINER SPENCER: Before we take a recess, it is now 11:39. I think we will take a 15-minute recess and won't recess until 1:30 and have a long session this afternoon.

We will take a recess until 11:45 by this clock.

(Whereupon, at 11:30 o'clock a. m. a recess was taken until 11:45 o'clock a. m.)

EXAMINER SPENCER: Gentlemen, the hearing will now be resumed.

BY MR. PAXSON:

Q. Mr. Grimsley, on page 88 of the record thus far made you referred to four exhibits, Nos. 2, 3, 4, and 5, and then you were asked the question by counsel "and those exhibits show the operating utilities in New Jersey import as well as export energy to the adjoining States"; and your answer was "That is correct."

I believe my question was or, at any rate, it is now: What do you mean by that answer? Do you mean to imply that those exhibits show that Jersey Central Power and Light Company imports from and exports energy to adjoining States?

A. Exhibit No. 2 relates to Jersey Central Power and Light transactions, that is, Jersey Central Power and Light Company energy transactions.

Q. Then, let's put it in another way. The other exhibits do not refer to Jersey Central at all, do they?

A. Then we get into difficulty because some of the other exhibits show interstate moves of energy.

Q. I think you are right on that; so that question is

not correct. I think I would better stick to my original question.

Do you mean to imply by that answer, or do you mean to state, if not imply, that these four exhibits show that Jersey Central Power and Light Company imports from and exports energy to adjoining States?

I think that requires a yes or no answer.

A. The question is too broad.

EXAMINER SPENCER: What is your answer, Mr. Grimsley?

BY MR. PAXSON:

Q. Don't you know what you meant by the answer, Mr. Grimsley, without reference to the exhibits?

A. Your question is pretty broad.

Q. I thought it was, but you said it was correct. I did not put the question. Mr. McAllister put the question.

A. But I mean to take all four exhibits—

Q. Then your answer was not correct, because all four exhibits were taken? If you want to withdraw the answer I am perfectly willing that you do so. I think it is too broad myself. That is why I brought it up.

A. We should get the record correct.

Q. Now, Mr. Grimsley, when I ask a simple question as to what an answer means I do not think it is necessary always to have to refer to a speech or something that was said yesterday. I tried to be tolerant. Possibly I let my feelings run away yesterday, but I tried to be considerate. But I think you should answer a few questions without turning to some speech or document to whose make up I don't know how many people contributed.

MR. McALLISTER: I think that is uncalled for.

EXAMINER SPENCER: Just a moment, please.

MR. PAXSON: I want it to appear on the record that he is referring to a memorandum.

EXAMINER SPENCER: Can you answer the question that is addressed to you, Mr. Grimsley?

THE WITNESS: Not in that form, Mr. Examiner. There are many transactions in those four exhibits that he is carrying with the one question.

MR. PAXSON: I think I have a right to a categorical answer.

EXAMINER SPENCER: You can answer that question yes or no and then explain what you mean.

BY MR. PAXSON:

Q. Mr. Grimsley, these four exhibits—

EXAMINER SPENCER: Just a minute. Let him answer the question.

THE WITNESS: I don't believe I understand the question.

EXAMINER SPENCER: His question is simply this, Mr. Grimsley: Is your response to the question on page 89 correct? The question is: "And those exhibits show the operating utilities in New Jersey import as well as export energy to the adjoining States," and you stated, "That is correct,"?

THE WITNESS: I think that is correct, if you want it that way.

EXAMINER SPENCER: He says that is correct.

BY MR. PAXSON:

Q. Then, by that answer you mean that these four exhibits showed the Jersey Central Power and Light Company imports energy from as well as exports energy to adjoining States?

A. I don't mean that. When you carry all four exhibits along together—

EXAMINER SPENCER: All right; go ahead and explain your answer, Mr. Grimsley.

THE WITNESS: By connecting up these exhibits as I did later, the movement of energy from one company to another, then movement of that energy from that company to another is the all-important point here that I was concerned with and am concerned with in the movement of energy from South Amboy to Staten Island. These do not connect that up.

BY EXAMINER SPENCER:

Q. Let me ask you this question: Does each of these exhibits refer to one particular company?

A. That is correct.

Q. And there are four exhibits?

A. That is correct.

Q. And there are four companies?

A. That is correct.

Q. And what you meant to say was that each exhibit, referring to one company, showed that they imported and exported, and another exhibit referring to another one, and so on through the four, and the four companies as shown by each exhibit separately as pertaining to each company import and export?

A. That is correct.

MR. McALLISTER: That is not the import of the question.

EXAMINER SPENCER: But I am asking that question.

THE WITNESS: That is not the correct sequence of the use of these tables as I intended. Perhaps I can make it clear in this way. Each one of these exhibits, with the heading of that company, shows its transactions under contract with other utilities with which it has connections and has interchanged

power; that is, each one of those. Now, it does not intend to show that the movement of energy can not take place between two companies not shown on one of these exhibits. There can be a middle link.

BY MR. PAXSON:

Q. Mr. Grimsley, let us take up Exhibit No. 2. Will you please point out to me where that exhibit shows the Jersey Central Power and Light Company imports energy from and exports energy to adjoining States?

A. The exhibit does not show that.

Q. It does not show it?

A. No.

Q. I didn't think it did.

A. It was not intended to show that, but in connection with one or the other I may have another situation.

Q. With another company there would be a different situation. I agree with you. Now, let's look at Exhibit No. 7. What does that exhibit purport to show?

A. Amount of energy produced in the State of New Jersey and the amount of energy imported from other States; in the next column it shows production, and it shows the exports, and the total of the two, and exports to other States, utilization in the State of New Jersey also.

Q. Does that exhibit in any way, either expressly or by implication, show the Jersey Central Power and Light Company imports from other States?

A. That was not the intention of it.

Q. Then your answer on page 93 was in error when you made this statement referring to Exhibit No. 7: "During every month during this period it shows the State of New Jersey received from and delivered to other States electric energy in large quantities"? That statement you think is accurate?

A. That statement I think is accurate.

Q. Then you follow it up later by saying: "I mean these companies in this network shown in Exhibit No. 1."

Exhibit No. 4 is the map which includes every company in New Jersey, at least these four.

A. The exhibits speak for themselves, that is, all of these energy transactions. Later I made another demonstration which does come back to this exhibit.

Q. You were trying to draw some inference by tying them all up?

A. Yes, sir.

Q. But the exhibit does not show the Jersey Central Power and Light Company itself exports or imports one kilowatt?

A. No.

Q. It was not so intended, was it?

A. In connection with the other. That is where we seem to get apart. Later on it is demonstrated that energy movements from South Amboy

Q. Just a moment please. You say it is demonstrated.

A. You will not let me finish.

MR. McALLISTER: I think the witness is entitled to complete his answer and not have it broken off in the middle.

BY MR. PAXSON:

Q. I didn't think I asked a question. But go ahead, Mr. Grimsley. I do not want to quarrel with you. We had enough of that yesterday.

A. At the time this was presented it was not the intention to show in here any definite amount particularly assignable to Jersey Central Power and Light Company, but later on I demonstrated that energy moved from South Amboy to Staten Island, and that would be included in this. You see they have a perfect relation to one another.

Q. You say later on you demonstrated that energy—Well, what did you say?

Will the reporter read it, please?

(The last answer of the witness was then read by the reporter.)

BY MR. PAXSON:

Q. Any energy which moves to Staten Island Edison Corporation comes from Public Service Electric and Gas Company, doesn't it?

A. They are the seller.

Q. They are the seller of the energy?

A. Yes. But it does not follow that the energy comes from sources of power owned by the Public Service.

Q. I think I follow you there. It does not necessarily follow that energy sold by one company is necessarily its own generation?

A. That is correct.

Q. Isn't that what you are saying?

A. That is correct. That makes it very clear.

Q. Is that the only instance that you have in mind of any energy flowing from Jersey Central Power and Light Company?

A. Out of the State?

Q. Outside the State. Do you know of any instance?

A. We have not definitely traced out any of them from Boonton through Pennsylvania to New York, if that answers your question, omitting Wrightstown and Elizabeth. But there is a reserve movement at times when the Jersey Central Power and Light Company was receiving large quantities of so-called dump power from Central Hudson. There may be cases and the records may prove that some of the New York energy moved there. But we have not studied that and carried it through to a definite conclusion.

Q. What you are saying is that if you made a study

of the situation you might find a kilowatt somewhere?

A. That is right.

Q. That moved to the Jersey Central which you say you could trace to the Central Hudson?

A. That is correct.

Q. As an expert engineer would you say that you can earmark a kilowatt?

A. I think that is an awfully crude question.

Q. It is a what?

A. It is a very crude question.

Q. Crude or cruel?

A. Crude.

Q. I am sorry, Mr. Grimsley. I am not an engineer, or possibly I could put the question a little better. I have heard engineers ask questions that were crude.

A. I believe I can answer your question in a way. If two plants are connected to a transmission line and both are delivering energy on that transmission line after they join, when they make their deliveries, you can not identify at that point the kilowatt hours coming from one or the other plant.

I think that answers your question.

Q. I think it does, Mr. Grimsley. We are getting along famously today.

Now, Mr. Grimsley, when you talk about a company importing electric energy or exporting electric energy, what do you mean? You have those words on Exhibit No. 12.

A. It is receiving energy over transmission facilities that may or may not be owned by it, from another company in an adjoining State.

Q. It does not imply any contract or arrangement in your mind?

A. No; not in the movement of energy in these networks. We find sometimes the contracts have little value or meaning at all. In other words, the operations are con-

ducted along substantially different lines than the contract itself indicates. They see no occasion to change the contract; they are both satisfied. But in making these studies of energy movements over State lines contracts do not have much value, if any. You have to deal with the facts relating to the movements of that energy.

Q. When you use the terms imports and exports you are really talking about movements, are you, irrespective of how they grow or what is the contractual relationship or obligation?

A. They receive energy from outside the State or deliver energy which passed outside the State. That is what is meant.

Q. Do you know of any instance where Jersey Central Power and Light Company imported any electric energy from outside the State?

A. Well, I demonstrated yesterday that Jersey Central Power and Light Company does receive energy at various times from Staten Island Edison Corporation.

Q. You are referring to that exhibit to which I made objection, of certain movements subsequent to March 14, 1938, are you not? You are referring to Exhibit No. 18, are you not?

A. Yes.

MR. McALLISTER: Will you identify the exhibit in your question, Mr. Paxson, so that there will be no question about it?

MR. PAXSON: I did in my last question, I believe.

THE WITNESS: I think you referred to Exhibit No. 18. That is right.

BY MR. PAXSON:

Q. You would not say that because of this statement that the Jersey Central Power and Light Company im-

ported any energy from Staten Island, would you?

A. Technically if that were to rest on the agency, that is, the middle agency, there may be some question. What I meant to convey is that Jersey Central Power and Light Company received some energy from Mechanic Street Substation which, in turn, was received from Staten Island. Therefore, it received energy that had been imported.

Q. That is, that had been imported by Public Service you mean?

A. That is correct.

Q. When you talk about this movement of power, isn't this movement data a mere mathematical calculation from certain statistics which you had or which you got from records?

A. I would not use the word "mere." That record is very definite, Mr. Paxson.

Q. Let us eliminate the word "mere". It is just a mathematical calculation?

A. It is more than that. It is a definite conclusion. Operating engineers know when they make computations what the results are. That is not "merely". It is carefully calculated.

Q. Now, Mr. Grimsley, in my questioning I have been trying to avoid the use of certain language both yesterday and today which would imply any legal conclusions because, of course, you are not competent to make them and it would not be competent testimony. Unfortunately, however, in scanning the record I find I did not hear some words which you used, which might have certain implications.

On page 43 of the record you make the statement: "In delivering energy to Public Service Electric and Gas Company and New Jersey Power and Light Company, Jersey Central is drawn into extensive interstate commerce transactions which take place over the boundary lines of the State of New Jersey."

You don't know, as a matter of fact, whether that is true or not in delivering energy or whether it is drawn into extensive interstate commerce transactions? You were not trying to tell us what interstate commerce is, were you?

A. Mr. Examiner, that is a very lengthy discussion prior to the question. Mr. Paxson made a statement that I am not in agreement on. I wish to make it clear I think certain sections of law that are written clearly an engineer may well interpret for himself and take his own risk, as I have many times. Some are so clearly drawn that I think my judgment would be very good on them. So in answering your question I do it with that qualification. I do not concede my judgment to interpret the law in some cases is not good or it is not my right.

Q. All right, then, Mr. Grimsley; explain your answer. We will have to go a little further with it now. You are now saying that that answer is correct, and in delivering energy to Public Service and New Jersey Power and Light Jersey Central is drawn into extensive interstate commerce transactions. What are they?

A. What are they?

Q. Yes. How is it drawn into extensive interstate commerce transactions?

A. I demonstrated that Jersey Central Power and Light Company received energy that was imported from the State of New York and that it generated and transmitted over facilities, part of which it owned, to another company, that is, the current went on through directly to another company in New York.

I also showed the time the system peak occurred on the Public Service Company's system, which is purely and clearly of an interstate nature.

Q. What was that last statement?

A. I also showed the time the system peak

occurred on the Public Service Company's system, which is purely and clearly of an interstate nature.

Q. Will you please proceed?

A. Of such peak South Amboy carried 9,000 kilowatts. I also stated that the power plants of the Jersey Central Power and Light Company were operating in synchronism with power plants located in Pennsylvania and in New York, and its frequency is controlled. The last report we had from Philadelphia, outside of the State, shows it has in a way surrendered its own control of frequency in its own system. It is not a serious matter. As it works out it is very satisfactory and economical and fine and good business.

Q. Mr. Grimsley, at any rate I think I am clear that it is your legal opinion that there are interstate commerce relations. That is what you are saying?

A. I think I have some very good opinions.

Q. Well, I asked you to explain the statement. Can you trace any power coming from South Amboy plant that goes to Pennsylvania? Do you know of any instance?

A. No; I have not done that.

Q. In your answer you brought in Pennsylvania. But you haven't any?

A. No. I haven't traced them.

Q. Mr. Grimsley, on page 113 of the record you made the statement that "To summarize the physical interconnections, the contractual relations and the interchanges of power between the several utilities," and I think you were referring to what you call a network, "make Jersey Central Power and Light Company an integral engineering and economic part of the large and extensive system."

Then you think the contractual relations are of quite some importance in determining this matter, don't you?

A. In the case of Jersey Central Power and Light

Company in connection with Mechanic Street, I do not think that contract is of any importange at all because they have, as you elected to refer to yesterday, a very efficient plant. Public Service has a plant shut down cold, right at Perth Amboy. They could not operate as cheaply as they can buy this power from Jersey Central. I think it has been a fine thing that Jersey Central can sell that power. It has probably financially been of a very substantial benefit to that corporation over a period of years.

Q. You don't know that, do you?

A. I have a pretty good understanding of that, yes, sir.

Q. What is the basis of that?

A. It is a long story, if you want to go into it.

Q. I don't want you to testify to the financial advantage of the company unless you know.

A. That follows naturally, Mr. Paxson. It follows the Jersey Central is not going to wear out its equipment and power plant and burn fuel to generate energy and put it over Public Service at less than its cost. You see, it must make a profit. Therefore, it follows that it has been of substantial financial benefit of this company.

Now, I can go further into the early history of this, if it means anything, when these negotiations were first started.

Q. Did you have anything to do with those negotiations?

A. Merely indirectly; yes, sir.

Q. Did you represent one of the two companies involved?

A. No, sir. I was conferred with, though, by representatives of the company. The facts speak for themselves anyway.

Q. Well, Mr. Grimsley, yesterday you seemed to be unable in any way to define economy power. So far as I

could gather from your answer there wasn't any such animal.

A. No; I did not mean to convey that.

Q. But today you are using the expression. What do you mean by economy power?

A. You are not giving a correct impression there, Mr. Paxson. I said economy flow in a contract, if it is not defined, I then do not know what it means, what the parties really had in mind. The records then as to how they have sold or purchased this energy would disclose that.

I also made it clear that if all of these terms you used, or many of them—stray power, incidental power, dump power, firm power, economy power. I don't see the presence of any of them in this particular transaction we are discussing. That power is flowing over there every day in the year and has every day in the year 1937 and every day this year to the last day we were there. It is carrying a substantial part of the load in that area. It is firm, just as firm whether written into the contract or not. As a matter of fact, it is delivering firm power that the Public Service is depending upon.

Q. Can you show me anything in the contract that proves it is firm or are you again just theorizing?

A. Now, I am relying upon the facts that are in the record.

Q. What are those facts?

A. That they are delivering energy over there during the important load hours, that it has carried part of the system peak and is carrying daily. Those are facts. I did not make that statement as a theory or as a guess.

Q. What do you mean by firm power? You used that expression. I want to pin you down to something. You used the expressions. When I use them you can't define them.

A. In this case, if you will mark the language, I have told you that this is operating as a source of firm power.

It is delivering it; the company is depending upon it.

Q. What company is depending upon it?

A. The Public Service.

Q. How do you know that?

A. The records show that they are receiving it; they are using it—carrying a part of its system load every day.

Q. Is Public Service entitled to any of that at any time? Can you name one minute in the day or throughout this period when Public Service was entitled to any of that power?

A. I am not concerned with whether it is entitled to it or not. It is receiving it, and I take it it is paying for it.

Q. Then don't use terms like "firm" unless you explain it to us. Doesn't firm power mean something one is entitled to?

A. If a contract were made designating firm power of a capacity to be available at certain times or at all times—I have found firm power contracts for periods of only three months and for twelve months.

Q. Where is your contract that shows Public Service is entitled to one kilowatt of this power? Have you found any?

A. The contract speaks for itself.

Q. Have you found any? Can't you answer my question? I don't like all of your speeches.

A. Well, what is your question?

Q. I have been very indulgent.

A. In contract Article II Public Service can call for it at any time it wants it.

Q. What kind of power?

A. The terms you are using are used for ascertaining costs for billing purposes. This energy goes over there, and I don't care whether you call it dump, economy, firm, or what it is. It is electric power, and the same and

only one kind of power. It lights the bulbs and it turns the motors. It is only one kind of power in the last analysis that is being generated and delivered here. These terms are confusing.

Q. Now, Mr. Grimsley—

MR. McALLISTER: Let him finish his answer.

MR. PAXSON: He is not answering.

MR. McALLISTER: He is answering.

EXAMINER SPENCER: Did you finish your answer, Mr. Grimsley?

THE WITNESS: No, sir. He broke my thought entirely.

EXAMINER SPENCER: Let him finish his answer, Mr. Paxson, in all cases.

MR. McALLISTER: I would like to have the opportunity of hearing what he did say, and then let him complete his statement.

EXAMINER SPENCER: Will the reporter read the answer, please?

(The answer of the witness was then read by the reporter.)

THE WITNESS: That is it. I am through.

EXAMINER SPENCER: You may proceed.

BY MR. PAXSON:

Q. Mr. Grimsley, when you say "Public Service depends upon power from Jersey Central to carry its peak load," I am asking you as an expert whether any company can be said to depend upon power to carry a peak load unless it is entitled to that power under a contract?

A. Yes; absolutely yes. Here is a clear demonstration of that.

Q. Then you did—

A. Let me finish my answer, please. Here is a clear demonstration of what has taken place by the terms of that contract. It is perfectly absurd and ridiculous to think that the Public Service of New Jersey has broken down facilities, has excessive loads, or such conditions that prevail every hour in the year. That is what the contract says. But that is not the kind of service Jersey Central is furnishing or the kind that the Public Service is buying or using. You know that a big system is not broken down every hour in the day with a turbine out or power plant out or transmission lines out. It is a highly efficient system, as I regard it, and a very dependable system. As the contract reveals, that might have been the intention; but I have tried clearly to say that it is not operating in that way.

Q. Don't you know the Jersey Central Power and Light Company any day can cease supplying power to Public Service Electric and Gas Company?

A. Why, yes.

Q. That is true, isn't it?

A. Under the terms of the contract; yes. But I have not been concerned with that, naturally, because I am only concerned with how it has operated.

Q. All you are saying is that you do not think that it does today?

A. It did not operate that way.

Q. Mr. Grimsley, with reference to inter-connection between Public Service and Staten Island, you state on page 116 that "Over this line some three million were delivered to Staten Island and nearly the same amount received from Staten Island."

As a matter of fact, isn't it true that the balance is in favor of Staten Island, by which I mean that more power has flowed from Staten Island to Public Service than from Public Service to Staten Island?

A. Exhibit No. 5 shows Staten Island purchased, in round numbers, 3,800,000 for the year 1934 and sold 3,000,000, in round numbers. There was a balance for that year.

Q. Let's take up 1937.

A. 1937 shows the order of the three previous years was slightly reversed. It was very nearly balanced, I would say.

Q. It was very nearly balanced out?

A. Yes.

Q. Last year an excess coming to Public Service?

A. Yes; the exhibit shows that.

BY MR. McALLISTER:

Q. What exhibit is that, so that it may be identified?

A. Exhibit 5.

EXAMINER SPENCER: He has already identified it.

BY MR. PAXSON:

Q. Then, Mr. Grimsley, don't you think it is a little remarkable to say that Staten Island is dependent upon Public Service when in 1937 it supplied Public Service with more power than it took from Public Service?

A. No. I think Staten Island is operating on a right close margin for efficient power plant capacity. They can buy that service apparently, as they have shown in their report, stand-by service or emergency service. In other words, it is a service they can call for and receive from Public Service in case of a breakdown of one of their units. They are depending very largely upon that, and it is probably the economical thing for them to do.

Q. I do not like to let words slip by. What do you mean by "dependent"?

A. Well, I am trying to make it clear. It means that they are operating there under conditions and if one of its

15,000 kilowatt turbines should go out the service will not be impaired; Mechanic Street will deliver that; it firms up their service.

Q. You mean in emergency they would take from Public Service?

A. Yes; or in case of repair periods it may be cheaper to buy that service than to own it. I think the word I used there is very proper.

Q. That is what you mean?

A. Yes.

Q. Actually the facts do show that they practically balance out?

A. Yes.

Q. And, if anything, last year Staten Island gave Public Service more than Public Service gave Staten Island?

A. Yes. That is a case where interchange comes in.

Q. And I do not suppose you can say during 1937 and the first part of 1938, up to March 14th, this interconnection was used for emergency service, if at all?

A. No; I can not say that. I do not have it indicated in the record. But while I was at the substation at Mechanic Street there was a flow and swing back and forth, indicating 2500 going out to Staten Island maybe in five seconds or in two seconds and 2500 kilowatts going the other way, operating in paralled, and apparently a satisfactory operation.

Q. Don't you know, as a matter of fact, that most of the flow of power between Staten Island and Public Service is either incidental power—by which I mean slop-over—for 1937 and for the first part of 1938, up to March 14th?

EXAMINER SPENCER: Can you answer that question, Mr. Grimsley?

THE WITNESS: I can answer it, but I would

like to refresh my memory here by referring to the contract. I will answer it.

EXAMINER SPENCER: All right. You may do so.

THE WITNESS: I will take issue with you on the term you used there. It is immaterial to me what you call it.

BY MR. PAXSON:

Q. So long as we agree on what it is, I don't care about the name. Use your name for it.

A. In Exhibit No. 19 on certain days there is a pretty heavy movement of energy.

Q. Suppose we approach it in another way. Isn't it true, Mr. Grimsley, that when a switch is closed some power flows back and forth, what some people may call incidental power or what some people may call slopover power, or you may call it something else? I don't want to quarrel with you as to the definition. But isn't that true?

A. That is true. Parallel operations can bring about those conditions.

Q. Parallel operations can bring about those conditions?

A. I say you can bring about those conditions.

Q. Doesn't that always happen when the switch is closed—

A. That depends.

Q. Let me finish the question, please, and then you may answer.

Isn't it true that when a switch is closed, which is the case—and we both agree on that—at Staten Island between Staten Island and Public Service, that some power or kilowatts flow over the line involuntarily and is what you call unwanted power, and it flows back again?

A. Yes, sir.

Q. It flows in both directions?

A. That is true.

Q. You would not call that a commercial transaction, would you?

A. I think it enters into it.

Q. It enters into the statistics here?

A. Well, let me explain that. That enters into the serious effect of the problem. That condition to which you refer can be brought about at will by the operators at Staten Island. If they are going along and at the time they do not want to take much or any from Public Service, they can balance out the swing and for the hour they can deliver just the little bit they can control and receive a little bit. That will take place. On the other hand, if they deliver a little more than they intended to they can take it back and even it up in the next hour. But by reason of operating conditions there you are pooling your facilities and taking advantage of that economic situation that arises. It is definitely there. There is a fundamental reason for all of these interconnections.

Q. You say that this involuntary or slopover power can be controlled?

A. As to amounts?

Q. Yes.

A. Yes.

Q. Isn't it the usual thing in your experience or your knowledge of those operations that some involuntarily seeps over and then goes back?

A. That is right.

Q. Like the ebb and flow of the tide?

A. Absolutely. I said that. I concede it.

Q. Irrespective of whether you state they can control it and push it over?

A. That is right.

Q. And if a large wave of it comes over the operator in Staten Island would immediately push it back if he did not want it, wouldn't he?

A. He can.

Q. I said if he does not want it he would.

A. Yes; if he does not want it, surely. In the meantime he has received it and used it.

Q. But he would send it back again?

A. That is true. That is quite true.

Q. And isn't it true—and if you don't know you may say so—that most of these statistics shown here on Exhibit No. 19 represent everything—incidental power—since the net result for the year is practically balanced?

A. I would not say that unless we had the hours. When Staten Island's peak is right up to the rating of these two generators then she is depending upon that swing there for that excess that may come on her own system, depending upon Mechanic Street for that.

Q. How do you know that? Is that just your conclusion?

A. I can not reach any other.

Q. I ask you how you knew it. You say you could not reach any other conclusion.

A. It is not a mere presumption. Abstract mathematics prove it.

Q. Then, prove it to me. I don't like these generalizations. If you say it is your opinion I am willing to let it go at that.

A. I may not be able to prove it to you.

EXAMINER SPENCER: Don't argue that. You may proceed.

THE WITNESS: Anyone knows when a system load is coming on, going up around 31,700—

BY MR. PAXSON:

Q. From what are you reading?

A. That is the peak load recorded. They can vary easily in that same system, with a demand of three or four or five thousand—You can only estimate this within rea-

sonable accuracy, you know. Operating there with two turbines, rated in one record as 30,000 kilowatts and in another and later report which says these turbines or generators may or will produce 35,000. I don't know for how long. They may have made some changes there, and, if they say they have, I believe it. They are getting dangerously close to the capacity of those generators. It would not be safe to operate under those conditions without some spinning reserve in their own system if they were not connected to the Mechanic Street Substation. They would not take that risk. They do not do it. They would have one of these other, less efficient generators, 10,000 kw. spinning along there to meet this peak. So again I want to make it clear that they are depending upon that source, very clearly by all records and deductions that I have made here.

Q. Of course, if a turbine broke down it would be an emergency, wouldn't it?

A. Oh, yes; or if they took one out for repair they could either start up their cold reserve or buy it. Certainly if they had that situation again and started up their cold reserve they are in the same situation then. They would be dependent upon Mechanic Street when such peak load came on to them.

Q. Now, Mr. Grimsley, will you please describe for me the meters on the switch board at Mechanic Street substation?

A. Can I describe them?

Q. Yes.

A. I saw all of them. We have a drawing purporting to show all of them. I cannot tell you off hand what meters are there except that I know that there are ammeters on each of the outgoing 26.4 feeders. Well, one of these exhibits shows that.

BY MR. McALLISTER:

Q. What does it show?

A. It shows ratings.

Q. What exhibit is that?

A. Exhibit No. 11 shows the instruments and the records which many of these calculations were based upon.

BY MR. PAXSON:

Q. Will you now proceed, please?

A. In the first column after the time column there is an indicating kilowatt instrument on the incoming line from Jersey Central Power and Light Company to Mechanic Street substation; there is a kilowatt indication going to Staten Island, there is a k. v. a. indication made up of three ammeters to the local load, to one bank of transformers and three to another bank of transformers, and there are two lines going to General Cable Corporation. That is recorded in amps. The line Q 199 on exhibit No. 9, the ampere readings are recorded, and line B 184 leading out of Mechanic Street to Keasby and Metuchen and ampere readings are shown, also line A 183, ampere readings are shown to the line connecting Mechanic Street to Metuchen. The next line is a duplicate line indicated as 196, ampere readings were taken.

Q. Have you any graphic watt hour meters?

A. There are ratchet watt hour meters to indicate the receipts and deliveries to both the Jersey Central Line and Staten Island line, so each one may do its own billing.

Q. When I asked about graphic watt hour meters I had in mind those which draw curves.

A. No. There are two watt hour meters. One has a ratchet that will not record except when energy is flowing in a given direction. The other meter has a ratchet that records when the energy is flowing in the other direction. So they have clearly recorded the receipts and the deliveries.

Q. Don't they have meters there that I call graphic watt hour meters? I am not sure whether I am technically correct. That is why I said that draw the curves.

A. I don't remember whether there were any in that station. I would not care to guess about it. I have some faint recollection that they had a reactive k. v. a. curve drawing instrument, but I am not sure.

Q. If they did have those meters that draw curves you did not study them?

A. No, sir. I had no occasion to study them for this job that I was on.

Q. What is the size of wire on the Mechanic Street—Metuchen tie-line?

A. On that we had that data, I thought, and we may have it, but at the moment I just cannot locate it.

Q. Do you know the size of the transformer located at Metuchen?

A. At Metuchen, you say?

Q. Yes.

A. I can give you that; yes, sir. Mr. Bass could have given us that if we had asked him for it yesterday, Mr. Paxson.

The diagram shows two banks of transformers and a spare transformer, three winding transformers, 132 k. v., 11 k. v., 26.4 k. v., capacity 185,000 k. v. a.

Q. Mr. Grimsley, isn't it a fact that Public Service Electric and Gas Company has more actual capacity available than is necessary to supply its own peak?

A. The Public Service?

Q. I say, Mr. Grimsley, isn't it a fact that Public Service Electric and Gas Company—and I used "Public Service", I believe, for short—has more actual capacity available than is necessary to supply its own peak in all the years that were studied?

A. That is true. I think I have testified to that on two or three occasions.

Q. Then, doesn't this show that Public Service Electric and Gas Company does not of necessity take any energy from Jersey Central?

A. Whether that necessity is confined to the physical use or the financial use, there is a difference. Speaking of physical assets, no, Public Service has ample capacity. Some of it is very old and inefficient.

Q. So it does not have to rely upon Jersey Central at all?

A. Not physically; but financially it has proven to be good policy to buy and interchange energy; because some of this equipment is very old and inefficient. That is to be found more or less in every system.

Q. When you make that general statement, what is the equipment that is so old and inefficient with Public Service? It is a pretty well managed and operated company, isn't it, Mr. Grimsley?

A. I think it is a splendid system. It is a fine organization. I have always regarded it very highly.

Q. Then the property is pretty well maintained, is it not?

A. Yes; I think so. I don't think they have breakdowns every hour in the year, as I stated before, of major importance.

MR. PAXSON: I think I shall take a rest, because my associate wants to ask some questions.

MR. McALLISTER: Just let me have an understanding, please. Are you substantially through, Mr. Paxson, except for incidental questions?

MR. PAXSON: I have a few more questions that I want to ask, but I am really getting weary. Because of the Commission's unwillingness to give me an adjournment I was up all night.

EXAMINER SPENCER: We will recess at this time until 2:30 o'clock.

(Whereupon, at 1:10 o'clock p. m., a recess was taken until 2:30 o'clock p. m.)

AFTER RECESS

(The hearing was resumed at 2:40 o'clock p. m., pursuant to recess.)

EXAMINER SPENCER: The hearing will be resumed. You may proceed, Mr. Autenrieth.

Whereupon

A. H. GRIMSLEY,

the witness on the stand at the time of recess, resumed the stand and testified further as follows:

Cross Examination (Continued)

BY MR. AUTENRIETH:

Q. Mr. Grimsley, referring to Exhibit No. 1, and in relation to the network shown on it, it is true, is it not, that interchange between New Jersey and Pennsylvania is pursuant to a contract that covers Philadelphia Electric Company and Pennsylvania Power and Light Company and Public Service?

A. You refer to that three party agreement?

Q. What we call the pool for the sake of giving it a name.

A. Yes.

Q. Jersey Central Power & Light Company is not a party to that contract, is it?

A. No.

Q. There are no contractual relations between Jersey Central Power & Light and Pennsylvania Power and Light?

A. Not that I know of.

Q. Or between Jersey Central and Philadelphia Electric Company?

A. None that I know of.

Q. Assuming any energy that came into that pool, Jersey Central's responsibility for that energy would

cease at its connection with Public Service?

A. That is right.

Q. Jersey Central can not call on Pennsylvania Power and Light facilities for energy?

A. That is right.

Q. Nor can they call on Philadelphia Electric Company for energy?

A. I know of no such contract; no, sir.

Q. Am I correct in quoting your testimony to the effect that you did not trace out the source of energy at Wrightstown and Boonton in the manner in which you did at Staten Island?

A. That is correct. I did not trace it out.

Q. Now referring to Staten Island, for a moment, I call your attention to Exhibit 6.

EXAMINER SPENCER: Mr. Autenrieth, if it would be more convenient, you may sit on this side of the table.

MR. AUTENRIETH: That is all right.

BY MR. AUTENRIETH:

Q. That purports to show the transactions between the four companies named on the exhibit as to power sold and power purchased; is that correct?

A. Yes, sir.

Q. Does it show any transaction between Jersey Central Power & Light Company and Staten Island Edison Company?

A. Not as such; no, sir.

Q. I am speaking of the exhibit. There are no transactions shown between those companies?

A. No, sir.

Q. In fact there are no direct transactions between those companies?

A. I know of no contractual transactions.

Q. Direct transactions?

A. Yes. I would say that there are no relations between them.

Q. I didn't ask you that. Your idea of relations is what you have already indicated in the transfer of energy through the medium of Public Service, is that it?

A. Let me have your question first, please.

EXAMINER SPENCER: Read the question.

(The reporter thereupon read the pending question as recorded.)

THE WITNESS: I think I can answer that this way. Only through the facilities of Public Service Gas and Electric.

Q. When you made Exhibit 6, it purported to show power purchased and sold?

A. Yes.

Q. You show no transaction between Jersey Central and Staten Island?

A. That is correct.

Q. Now, prior to 1931, do you know whether Jersey Central transmitted any energy to Public Service?

A. Not offhand, I do not know.

Q. I do not know. That is your answer, that you don't?

A. Oh, I can determine that by the records here available.

Q. I can prove it otherwise. I wanted to call your attention to the next question.

A. All right.

Q. Do you know how long Staten Island Edison has taken power from Public Service?

A. Offhand, I do not.

Q. Do you know how long the present connecting facilities have existed between Staten Island and Public Service?

A. Only to the extent indicated in the contract, and I don't know whether that fixes the date or not.

Q. Do you know whether or not the facilities between Staten Island Edison and Public Service existed before Jersey Central ever came into existence?

A. I do not know that; no, sir.

Q. Now again referring to Exhibit 6, it is true, is it not, that the amount of energy for the year 1937 that Staten Island purchased from Public Service is less than 1 per cent of the total production of Jersey Central?

A. Well, I can calculate that.

Q. That is somewhat apparent on the face of it. I didn't ask you the exact percentage, but it is less than 1?

A. All right.

Q. It appears also, does it not, for the year 1937, that Staten Island took from Public Service approximately 5½ per cent of the energy delivered by Jersey Central Public Service?

A. I will have to have that question read, please.

(Thereupon the reporter read the pending question as recorded.)

BY MR. AUTENRIETH:

Q. That is just a rough calculation.

MR. McALLISTER: The figures relate to one another.

BY MR. AUTENRIETH:

Q. Suppose I put it this way: It is obvious on the exhibit——

A. (Interposing) It certainly checks out 5½ per cent roughly.

Q. Roughly 5½ per cent?

A. Yes, sir.

Q. Now the connection between Jersey Central and Public Service at South Amboy is usually closed, is it not?

A. Sure.

Q. Closed?

A. Yes, sir.

Q. And I believe you did say the trend of the flow was generally in the direction of Public Service?

A. Yes.

Q. In that situation there is a constant amount of incidental, slop-over energy on this line flowing in one direction or the other?

A. To Mechanic Street?

Q. To Mechanic Street.

A. Definitely, no.

Q. Well, because the trend is usually in the direction of Public Service there is a constant flow in one direction?

A. Yes, during about the 18 hour period.

Q. I understood you to say that this energy delivered over this connection is in your opinion firm power?

A. According to the record, yes.

Q. You say that because of its fair degree of constancy and quantity?

A. Yes, sir.

Q. You say you would not call it economy flow?

A. I can't see any situation there where that energy might be classed as economy flow. However I do want to make it clear that I think that the records show the movement of this energy to Mechanic Street results in a substantially firm supply.

Q. Well, except for such times when they are running fairly close to balance?

A. After midnight until six o'clock in the morning.

Q. Except for such times, isn't it a fact there are daily transactions between the load dispatchers for any excess of ordinary flow?

A. That is my understanding, they agree on prices.

Q. And the excess to Public Service is based on the difference in generating capacity of the two companies?

A. That is right.

Q. Isn't it also a fact that costs must be agreed upon in each transaction from day to day or several times during the day?

A. I think so; yes, sir.

Q. It is also true Public Service must call for power in quantities it desires from time to time?

A. I believe the terms of the contract indicate that, but whether in fact if it is done, I don't know. I am inclined to think if might be done over two or three hour periods. They do their shopping on prices.

Q. That has gotten down to where it is a routine matter?

A. That is right.

Q. You say contract. Is there any written contract that you know of whereby this energy priced out on differential between generating costs exist between these parties?

A. Why sure.

Q. That is a contract between Jersey Central and Public Service?

A. Yes.

MR. AUTENRIETH: Off the record.

(Discussion off the record.)

BY MR. AUTENRIETH:

Q. Does that provide for the billing of this energy on the generating cost basis?

A. I should have to refresh my memory.

Q. Or does it only provide

A. (Interposing) I would prefer to refer to the record and be accurate.

In order to progress more rapidly and without going into this again more fully, I don't find any plan for billing other than for emergency power, and if there is reference to the sale of economy power I haven't seen it so far.

Q. It is not referred to in that contract?

A. I don't say it is not in here. It is quite lengthy, but it seems, in this short time, the price arrangement seems to be all based on emergency power. Now there may be other conditions in here providing for this economy power, but I don't see it.

Q. You mentioned the expression emergency power.

A. Beg pardon?

Q. You mentioned the expression emergency power.

A. Yes, sir.

Q. I understand the best definition of it is that each of the parties themselves give it to it under the terms of the contract, is that right?

A. I think when they do that there can be no question about the meaning of it as is to be used in the contract.

Q. And in their contract you have just referred to, what is the date of it?

A. In the event of breakdown—

Q. (Interposing) What is the date of that contract?

A. The 24th day of March, 1931.

Q. Now assuming, therefore, that economy flow is not provided for by the contract which you have just mentioned, and the transactions relating to economy flow are day-to-day transactions between load dispatchers, as to prices, do you still say that the classification of that power is firm power?

A. I don't think that makes any difference.

Q. Is the firm power that power which they are obligated to supply?

A. I think the records prove what they have to do.

Q. The records may show it has been carried on with characteristics equivalent to firm power, but isn't that understood in the industry that firm power contracts are those where there is an obligation to supply?

A. That is absolutely right.

Q. And emergency is not a firm obligation except where the supply system is in position to do it?

A. That is what I have stated several times. The contract apparently is not operating, or the service is not operating as emergency service. If it is then to be emergency service it must have one of these conditions defined here every day in the year, breakdown of equipment, unusual load demand and or unusual or abnormal conditions of system of other party resulting in need of that party of power in excess of capacity available from its normal power source.

Well, it isn't reasonable to expect that that large system finds itself in that shape every day in the year.

Q. Would it be reasonable to find the conditions such whereby the generating costs of Jersey Central are always slightly lower than Public Service?

A. I think the contract proves that.

Q. You think the contract proves that?

A. Yes, sir.

Q. And that would be the basis for taking economic flow supply?

A. I said it unquestionably results in lower costs which permit them to shut down their Perth Amboy plant. They could not, in my opinion, as an operating man, shut that plant down cold in that important load area without this connection, without this very dependable connection.

Q. Do you know whether that connection is severable at will?

A. Yes, sir.

Q. It is?

A. Yes.

Q. If it were a contract for firm power it would have a term of years or months?

A. If it were a contract for firm power?

Q. Yes.

A. That is true.

Q. And the rate for firm power would be something in excess of the rate on economy flow?

A. Yes, that is true.

Q. Because of the obligation to serve?

A. That is true.

Q. It would keep the supplying company always in the position of standing by?

A. Yes, but that does not alter the way in which the service has been used.

Q. Now to get down to the end of this discussion, as I understand, you call it firm power because of its constancy and quantity?

A. I am afraid you misunderstood.

Q. If I did, correct me.

A. I didn't say that it was firm power. I said the records disclosed that it is serving that function. It is actually doing that. I don't care what you call it, firm or not, it is in fact rendering a service over a period of time that the records show is dependable, reliable and in a given amount, such as Public Service requires and is operating equivalent to that. There is a great deal of difference between a contract for that. I wonder if I make myself clear?

Q. I was trying to get your definition why you call this firm power, and I understand you to say because of its constant flow and quantity over a long period of time, and because it had all the aspects and characteristics of firm power you so considered it.

A. The service supplied has been tantamount or equivalent to firm power.

Q. Although it is severable at will?

A. Yes.

Q. Your testimony—excuse me, had you finished?

A. I don't believe the executives of these two companies would each arbitrarily cut that off and exercise their right in the contract after so long a time as proved it to

be profitable.

Q. They have the right to do it?

A. Absolutely.

Q. Then your statement the connection of Staten Island is reliable because of the availability of power from Jersey Central is subject to the right to discontinue?

A. The question has distorted my whole line of thought.

Q. Then I misread it or misunderstood it.

MR. McALLISTER: It seems to me that the contract itself rather than the witness's answer would determine what the contract provides as to the terms under which it might be terminated, and I merely want to have the record show this contract is already in evidence and it is surprising to me that the witness should be cross examined on the terms of the contract and analyze the terms of the contract.

MR. AUTENRIETH: There is no contract here on economic flow. There is no provision for economic flow in that. When we come to our case we will prove the verbal understanding.

MR. McALLISTER: You did not make that clear and I don't think Mr. Grimsley in his answer was referring to a contract about which he did not know, but his answer was related to the contract which he has before him.

EXAMINER SPENCER: Has this contract been offered in evidence?

MR. PAXSON: Offered by reference only.

EXAMINER SPENCER: By reference.

MR. PAXSON: You offered it.

MR. McALLISTER: I think I did. That is what I say.

MR. AUTENRIETH: It has no exhibit number?

MR. McALLISTER: No exhibit number.

MR. AUTENRIETH: That is right.

MR. McALLISTER: If the questions addressed to Mr. Grimsley relate to that contract and his answers are with reference to that contract, that is one thing, but if your question related to some other contract about which he didn't testify and Mr. Grimsley in his answers was relating them to this contract and that misunderstanding exists, then we have something on the record which may give the wrong impression.

EXAMINER SPENCER: All right, has this contract which you have before you been introduced in evidence?

MR. McALLISTER: Yes, it has, Mr. Examiner, at page 33 of the record.

MR. AUTENRIETH: By reference and not by exhibit number. I intend to offer them for exhibit numbers as I get around to my side of the case.

EXAMINER SPENCER: All right.

BY MR. AUTENRIETH:

Q. I will clear this up. I thought Mr. Grimsley had some knowledge of the verbal arrangement.

Did you know there is a verbal arrangement effecting economy flow between Public Service and Jersey Central?

A. I did not.

MR. AUTENRIETH: His answer has qualified that.

MR. McALLISTER: In other words, when he had in mind the contract which is Public Service rate schedule F. P. C. No. 7, introduced in evidence on page 33 of the record, his answers related to the pro-

visions of that contract, when in fact you had in mind in putting the questions—

MR. AUTENRIETH: (Interposing) I asked him, assuming he knew about this contract. Anything that refers to economy flow, I am willing to have stricken.

EXAMINER SPENCER: Let the questions relating to economy flow under any contract between Jersey Central Power & Light Company and Public Service and the answers thereto be stricken from the record.

BY MR. AUTENRIETH:

Q. And one more question so we can get one other fact clear. When you said the contract was severable at the will of the parties you referred to the written contract and not the verbal understanding?

A. Yes, sir.

MR. AUTENRIETH: I think that ought to be cleared up.

EXAMINER SPENCER: All right.

MR. PAXSON: Pardon me, is Mr. Grimsley testifying, or the other three gentlemen? There has been an awful lot of coaching going on here. We don't coach our witnesses.

EXAMINER SPENCER: Proceed.

BY MR. AUTENRIETH:

Q. Mr. Grimsley, I understood you stated—

A. (interposing) I wish to get something straightened out for the record.

Q. All right, strike that and proceed.

A. I was taking it for granted that you were stating the terms of the contract.

Q. Which contract?

A. This one in evidence, the only one I know of, and

the terms of this contract don't seem to bear you out in the statements you have made on two or more occasions when you put the question to me that it was severable immediately was the idea you conveyed.

Q. I was asking about economy and I have stricken that all out because I understood your references related to the other and they may be stricken out.

A. Now, for the accuracy of the record—

Q. (interposing) All right, make your statement.

A. Then this contract is not severable upon a moment's notice or a few hours' notice.

Q. Not the emergency contract?

A. I don't contend that it is.

Q. That is what I was asking you, thinking you knew of the economy flow agreement and then I conceded that it be stricken.

MR. McALLISTER: It isn't clear unless you refer to the provisions of the contract.

MR. AUTENRIETH: I will admit—

EXAMINER SPENCER: (interposing) Proceed with the cross examination. Any matters not cleared up may be cleared up on redirect.

BY MR. AUTENRIETH:

Q. Now I understood you to say if the Public Service did not have the Jersey Central connection it would not dare close down its Perth Amboy generating plant.

A. I doubt whether I put that statement just that way.

Q. You put it again, the way you meant it, will you?

A. I do not believe that the Public Service Electric and Gas Company would shut down its Perth Amboy plant without this connection.

Q. Why do you say that?

A. Because it is obligated to deliver on demand

breakdown, according to the report of the Staten Island, some 25,000 kilowatts. Now it doesn't seem reasonable that Public Service would shut that plant down at Perth Amboy and yet obligate itself to deliver on short notice 25,000 kilowatts to Staten Island without this connection at Perth Amboy.

Q. Isn't there a great deal of excess capacity right in the vicinity of Perth Amboy?

A. It is not my understanding; no, sir.

Q. What about Metuchen?

A. That is only a switching station and quite a distance from the power plant.

Q. Where is the nearest generating capacity?

A. Keany seems to be the nearest plant of its own.

Q. You have the Essex Station in almost the same vicinity as well, don't you?

A. Yes, but by the transmission plant it would be farther and would be farther from the Marion plant too.

Q. When you say you don't believe the Public Service would close it down, that is a matter of opinion?

A. That is right.

Cross Examination (continued)

BY MR. PAXSON:

Q. Now, Mr. Grimsley, let us turn for a moment to Exhibit Nos. 11 and 12. Do you have those exhibits before you, Mr. Grimsley?

A. 11 and 12: yes, sir.

Q. I don't want to rush you. Have you got them?

A. Yes.

Q. Now taking up that Exhibit 11, how many readings are shown here? This shows instrument readings recorded on the substation log sheets of Public Service Electric and Gas Company at Mechanic Street Substation, I understand?

A. Yes.

Q. How many readings are shown there?

A. Well, you first asked how many readings were shown and then another question which I didn't understand.

EXAMINER SPENCER: Read the question.

(The reporter thereupon read the pending question as recorded.)

THE WITNESS: Well, I will have to count them up. That will take some time.

BY MR. PAXSON:

Q. Pardon me.

MR. McALLISTER: That was down this way and across. Do you want to confuse him? Do you mean how many times?

BY MR. PAXSON:

Q. I think readings, as one reads all the way across they are not parallel columns for how many different times?

A. We take them down the time column, I think there are 150.

Q. About 150?

A. Yes, sir.

Q. I just wanted an approximate on it.

A. Yes, sir.

Q. Now what period of time is covered by this exhibit?

A. The first one appears January 26, 1937. The last one September 6, 1938.

Q. How many gross readings would there be for the entire period covered? If you had taken all the readings, how many would there have been?

A. I think I can calculate that in a few minutes.

Q. Go right ahead and do it. It won't take very

long. (After a pause.) Mr. Grimsley, I didn't really care to have that mathematically correct. If you think you can approximate it, that would be all right. If you can't I would rather have it mathematically. I am not going to quarrel with you if you are 50 or 100 out of line.

A. I get approximately 25,520.

Q. Well, something over 25,000 readings. My figures were approximately 25,000, so I guess we are substantially in accord.

A. My head is not very good for that kind of mathematics now.

Q. That is all right. Then you have taken some 150 readings out of approximately 25,000 readings. Just why did you take these particular 150, Mr. Grimsley?

A. At times when considerable power was going over from Jersey Central and for the same period it was going to Staten Island. That was necessary to make my determination. Now we might get 15,000, I don't know, to compare with those, but the point was to establish certain conditions at time of flow and at times when there was no energy flowing to Staten Island there was no point in taking those readings.

Q. These are hand-picked readings where you worked toward a particular result and you selected those that would best show what you desired to establish?

A. I was trying to get a condition when the energy was coming over from Jersey Central and flowing to Staten Island and over a period that might be considered typical.

Q. Just a moment—

A. (interposing) I don't know unless we go through all of them and compare them with these.

Q. I suppose it would be pretty easy to pick out 150 other examples when power is flowing from Metuchen substation to Staten Island supplying the Mechanic Street load, would it not?

A. Oh, I think so, yes. Maybe more.

MR. PAXSON: That is all.

EXAMINER SPENCER: Does that conclude your cross examination?

MR. PAXSON: I have no further cross examination.

MR. AUTENRIETH: I have no further cross examination.

EXAMINER SPENCER: You may resume your redirect, Mr. McAllister.

MR. McALLISTER: May we have a short recess?

EXAMINER SPENCER: How long?

MR. McALLISTER: Well, we didn't know the cross examination would be finished so abruptly and we need a little time to confer.

MR. PAXSON: We do surprising things sometimes.

EXAMINER SPENCER: We will take a 10-minute recess.

(Whereupon a 10-minute recess was taken, at the conclusion of which the following occurred:)

EXAMINER SPENCER: Gentlemen, the hearing will now be resumed.

MR. McALLISTER: Mr. Examiner, I have no redirect examination of Mr. Grimsley. That concludes the case on behalf of the Federal Power Commission in chief.

We rest at this point.

MR. AUTENRIETH: If Your Honor please, they stated yesterday I believe it was, Mr. Crumley, who is President of Jersey Central Power and Light Company, really should be the first witness, whether it is on my side or Mr. Paxson's. He would lay the narrative for the story as a whole, to which the other witnesses could supply the corroborative evidence.

If it is convenient, I would like to have his testimony laid over until tomorrow. His testimony will not be long. I think we can finish entirely tomorrow.

EXAMINER SPENCER: Is he the witness for the Jersey Central?

MR. AUTENRIETH: Yes, Mr. Examiner, and the only witness.

EXAMINER SPENCER: Is he also a witness for the New Jersey Power and Light Company?

MR. PAXSON: The same interests are involved.

MR. AUTENRIETH: It is on the same question of interstate commerce. As I said, we are not interested in the stock question.

EXAMINER SPENCER: And he will be here tomorrow?

MR. AUTENRIETH: He is coming in tonight, so he will be here in time to start tomorrow.

EXAMINER SPENCER: Mr. McAllister, what have you to say?

MR. McALLISTER: Mr. Examiner, I have this comment to make, that it seems to me the case on behalf of the respondent might reasonably proceed this afternoon. We worked until 1:30 in order to accomplish something, and it hardly seems we are mak-

ing much progress under these circumstances and we ought not to adjourn at this time. We are ready to go forward now. We are raring to go right now.

MR. PAXSON: What he means is that he is raring to have us go.

MR. McALLISTER: I will accept that suggestion.

EXAMINER SPENCER: As to the adjournment at 1:30, all I can say is, "The best laid plans of mice and men sometimes go astray." It just did not work out so that we could carry on until 6 or 7 o'clock this evening.

Unless counsel for the Commission has some serious objection, the case will be adjourned until tomorrow morning at 9:30.

MR. McALLISTER: I would like to have it start at 10 o'clock, Mr. Examiner.

EXAMINER SPENCER: You will have no evidence to put in tomorrow. If we start at 9 o'clock we will come nearer to getting through tomorrow. And I will say, gentlemen, that we will get through tomorrow if it is necessary to sit until 12 o'clock midnight.

If we start at 10 o'clock will we finish tomorrow?

MR. AUTENRIETH: Mr. Crumley will not be long.

EXAMINER SPENCER: How many more witnesses will you have?

MR. AUTENRIETH: That is all.

EXAMINER SPENCER: How many witnesses will you have, Mr. Paxson?

MR. PAXSON: I do not know as to that. We

may cover all of it by Mr. Crumley or we may have some minor matters to take up in addition.

EXAMINER SPENCER: Well, gentlemen, we will adjourn at this time until 10 o'clock tomorrow morning.

(Thereupon, at 3:50 o'clock p. m. an adjournment was taken until Friday, September 30, 1938, at 10 o'clock a. m.)

Washington, D. C.,
Friday, September 30, 1938.

The hearing in the above-entitled matter was resumed, pursuant to adjournment, in Room 1201, Hurley-Wright Building, 1800 Pennsylvania Avenue, N. W., Washington, D. C., at 10:00 o'clock a. m.

Before:

Carroll B. Spencer, Trial Examiner.

Appearances:

As heretofore noted.

PROCEEDINGS

EXAMINER SPENCER: Gentlemen, the hearing will now come to order.

MR. AUTENRIETH: I will now call Mr. Crumley as the first witness.

Whereupon,

THOMAS R. CRUMLEY

was called as a witness on behalf of the Intervener and, having been first duly sworn, testified as follows:

Direct Examination

BY MR. AUTENRIETH:

Q. Will you please state your name?

A. Thomas R. Crumley.

Q. Where do you reside, Mr. Crumley?

A. Eatontown, New Jersey.

Q. What is your position with the Jersey Central Power and Light Company?

A. I am President.

Q. You have been President for about how long?

A. Ten years.

Q. When was Jersey Central Power and Light Company incorporated?

A. February 2, 1925.

Q. Just briefly, Mr. Crumley, prior to the incorporation of Jersey Central Power and Light Company what was the electric condition throughout the territory now served by Jersey Central?

A. At that time there were a lot of small independent companies which were incorporated into Jersey Central Power and Light Company at the time of that incorporation.

Q. Jersey Central Power and Light Company is a consolidation and merger of a number of small companies in its territory?

A. That is right.

Q. Mr. Crumley, I show you a map. Does this map correctly define the present Jersey Central Power and Light Company System?

A. Yes, sir; it does.

MR. AUTENRIETH: I will offer that map in evidence as Exhibit No. 1.

EXAMINER SPENCER: Is there any objection?

MR. McALLISTER: I see no objection at this time.

EXAMINER SPENCER: It will be admitted as intervener's exhibit No. 1.

(The document above referred to was received in evidence and marked Intervener's exhibit No. 1.)

BY MR. AUTENRIETH:

Q. Mr. Crumley, you are also an electrical engineer, are you not?

A. I am.

Q. And you have been engaged in the profession of electrical engineering for how long?

A. About 37 years.

Q. Have you actually operated and constructed electric properties?

A. I have.

Q. During what time? During that period you have mentioned?

A. Yes, sir.

Q. That has been practically your only vocation in life, hasn't it?

A. Yes, sir.

Q. Mr. Crumley, you mentioned the present Jersey Central Power and Light Company is the result of the consolidation and merger of a number of small independent companies.

A. Yes, sir.

Q. To indicate the general magnitude of Jersey Central can you state the present outstanding securities?

A. In round figures?

Q. Yes. That will be sufficient.

A. There are $42,225,000 of bonds, par value; approximately $22,000,000 preferred stock—

Q. Of three different series?

A. Of 5½, 6 and 7 per cent, in approximately equal amounts, and $10,537,700 par value of common stock.

Q. A total invested capital of approximately how much?

A. Just a little short of $75,000,000.

Q. Going back to the electrical situation with respect to generating capacity, prior to 1930 what was the situation electrically with Jersey Central?

A. Prior to 1930 we were operating a number of small generating plants which had originally belonged to the constituent companies now forming Jersey Central Power and Light Company, and we were also buying part of our requirements from Public Service Electric and Gas Company.

Q. As firm power?

A. Yes; as firm power, at South Amboy.

Q. In 1930 what took place with respect to your generating capacity?

A. In 1930 we built a 50,000 k. w. plant at South Amboy, New Jersey.

Q. Proceed, please.

A. At the time when we put that plant into operation we stopped buying firm power from Public Service Electric and Gas Company and we also closed down a number of small, inefficient plants which had been supplying our requirements before that time.

Q. This South Amboy plant was more than adequate for your own company demands, was it not?

A. Yes, sir.

Q. In 1930 there was a company contiguous to the property of the Jersey Central right in your territory

known as the Eastern New Jersey Power Company, was there not?

A. That is right.

Q. Did that company finally become a part of Jersey Central?

A. It was acquired in 1931 and merged into Jersey Central Power and Light Company.

Q. During the period in 1930 when you were constructing the South Amboy Plant did the Eastern New Jersey Power Company also construct a plant?

A. They were engaged at the same time in building a 60,000 k. w. plant at Sayreville, sometimes called the Raritan River plant.

Q. Both of those plants went into operation some time in the latter part of 1930 or in 1931?

A. That is correct.

Q. So in 1931 Jersey Central found itself possessed of these two plants?

A. That is correct.

Q. And that made you rather long on power, did it not, Mr. Crumley?

A. That is true.

Q. At the present time how many customers, in round figures, does Jersey Central have?

A. About 101,000.

Q. You say that in 1931 you discontinued the firm power contract with Public Service Electric and Gas Company and entered into an emergency power contract?

A. Yes.

MR. McALLISTER: I had not heard him say that.

MR. AUTENRIETH: I thought he said it.

BY MR. AUTENRIETH:

Q. At any rate, Mr. Crumley, will you tell us about that?

A. Yes, sir; that is right.

Q. Will you proceed, please?

A. In 1931 we entered into a new contract with Public Service Electric and Gas Company for emergency power.

Q. I show you a photostatic copy of contract dated March 24, 1931, and I will ask you if that is the contract to which you refer.

A. Yes, sir; this is the contract.

MR. McALLISTER: Are you going to offer that for the record?

MR. AUTENRIETH: Right now. I offer this contract as Jersey Central exhibit No. 2.

EXAMINER SPENCER: Without objection, the contract will be admitted as intervener's exhibit No. 2.

(The contract above referred to was received in evidence and marked Intervener's exhibit No. 2.)

BY MR. AUTENRIETH:

Q. At that time, Mr. Crumley, did you also enter into any other arrangement with Public Service Electric and Gas Company with relation to the interchange of economy flow power?

A. Yes, sir; we did.

Q. Will you please state what that arrangement is?

A. That is a verbal arrangement which was worked out between the engineers of Jersey Central Power and Light Company and the engineers of Public Service Electric and Gas Company and the arrangement was approved by me for Jersey Central Power and Light Company and also by a representative of the Public Service Electric and Gas Company for their side.

Q. And with respect to the interchange of economy flow has that contract or that arrangement been carried on ever since?

A. Yes, sir; it has.

Q. Will you please describe the terms of that arrangement?

A. Economy flow energy is energy which is generated and supplied by one company to another company where the receiving company could generate the same amount of energy at a higher cost. The receiving company must have at all times the capacity to supply that energy.

I might elaborate on that a little bit. When we sell economy flow energy to Public Service Electric and Gas Company it is because we can generate that energy more cheaply than they can. We split the profit that is made by that transaction between the two companies, equally between the Public Service Electric and Gas Company and ourselves.

Q. When you say "profit" do you mean the difference between the generating cost of each company?

A. That is right.

Q. That is divided?

A. Yes, sir.

Q. Will you proceed, please?

A. As an example, if our costs were two mills per k. w. h. and Public Service Company's cost at that time were three mills, the energy would be billed at 2½ mills. We would make a little profit and Public Service Electric and Gas Company would save the same amount.

Q. The practical operation of this arrangement constitutes some form of a daily transaction, doesn't it?

A. That is correct.

Q. Just what is that transaction and how does it take place?

A. In the first place, both companies give to the other the data that is necessary for them to have in order to arrive at the costs. And Public Service will call up and find out from our load dispatcher how much extra capacity we have available and will also find out if our costs are

normal. Then they will determine whether they can buy power from us at a saving; and then they will notify us to give them five or ten thousand k. w., or whatever they may desire.

Q. And that is a daily transaction?

A. Yes; that is true.

Q. You say Public Service calls up. You mean their load dispatcher calls Jersey Central's load dispatcher, do you not?

A. That is right.

Q. And they conclude the calculation of generating costs?

A. That is correct.

Q. And then Public Service determines whether or not it will buy?

A. That is correct.

Q. Under that arrangement Jersey Central may also buy from Public Service when the costs are the other way?

A. Yes; that is true.

Q. In actual practice, Mr. Crumley, what has been the general trend of the flow of this power?

A. It has been toward Public Service.

Q. And that is due to what?

A. It is due to the fact that our generating costs are lower than their costs.

Q. As a rule?

A. As a rule; yes, sir.

Q. I take it the South Amboy plant is a highly efficient plant?

A. That is true.

Q. When you speak of this economy flow contract, that relates only to the connection at South Amboy?

A. That is right.

Q. There are no other connections with Public Service with which you interchange economy flow?

A. That is true.

Q. What connections do you have with Public Service Electric and Gas Company?

A. We have two other connections with Public Service Electric and Gas Company, at or near Wrightstown, New Jersey.

Q. Is that pursuant to a written contract?

A. It is.

Q. I show you a contract dated July 19, 1935. Is that the contract to which you refer?

A. Yes, sir.

MR. AUTENRIETH: I offer this contract in evidence.

EXAMINER SPENCER: Without objection, it is admitted and will be marked Intervener's exhibit No. 3.

(The contract above referred to was received in evidence and marked Intervener's exhibit No. 3.)

BY MR. AUTENRIETH:

Q. Mr. Crumley, you also have a connection with the New Jersey Power and Light Company, have you not?

A. We have.

Q. Where?

A. At Boonton.

Q. And originally that was pursuant to a contract dated when? Do you know the date of the original contract?

A. No, sir; I do not recall the date. It is specified in that contract.

Q. It is specified in the contract which I am about to show you, but I don't see it right off hand.

A. I think I can find it.

Q. That original arrangement was superseded by a

subsequent contract, dated February 6, 1937? Is that correct, Mr. Crumley?

A. That is correct.

MR. AUTENRIETH: I offer in evidence a copy of the contract referred to.

EXAMINER SPENCER: Without objection, it will be admitted and will be marked Intervener's exhibit No. 4.

(The document above referred to was received in evidence and marked Intervener's exhibit No. 4.)

BY MR. AUTENRIETH:

Q. Mr. Crumley, returning now to the Public Service connection at Wrightstown, will you please describe the connections there with Public Service Company?

A. Public Service Electric and Gas Company supplies us with energy for a limited section of our territory for the reason that we do not have adequate transmission facilities to serve that territory ourselves, so we purchase energy from Public Service to serve our customers in that small area.

Q. That area is at the southern end of your property?

A. That is right.

Q. You say you purchase firm energy?

A. Yes, sir.

Q. Will you please describe how that energy enters into the Wrightstown station?

A. It comes over a 26,400 volt line from Burlington, which line runs to a small town named Birmingham; it passes Mt. Holly, and that line is tapped off at Mt. Holly for a substation.

Q. These lines are Public Service Lines?

A. Yes, sir. At Birmingham the voltage is stepped down from 26,400 to 4,000 and a number of customers in

the small town of Birmingham are fed off of that 4,000 k. v. bus.

Q. Then, Public Service customers you refer to? They are Public Service Customers, are they?

A. They are Public Service Customers. Then it is stepped up at that point to 13,200 volts and comes over Public Service Electric and Gas Company's line to a point named Comical Corners. The line divides there, one line going down to New Lisbon.

Q. Is Comical Corners about at the borderline of Public Service Company's territory and Jersey Central's territory?

A. Yes.

Q. Except for Camp Dix, which you will explain in just a moment?

A. Yes, sir.

Q. Will you please proceed?

A. The line goes to New Lisbon to serve a small substation at that point and is transformed down to 2300 volts for service to that area.

Q. It goes immediately to distribution for Jersey Central customers?

A. That is right.

Q. At that point?

A. That is correct.

Q. Proceed, please.

A. The other line runs from Comical Corners through Camp Dix and is tapped off at that point to serve Camp Dix by Public Service. Then it continues on our pools for about three-quarters of a mile to Wrightstown.

The Wrightstown connection is ordinarily kept open except when we have trouble with our line and we disconnect our lines from Hightstown at some point between Wrightstown and Hightstown and serve Wrightstown area from this connection.

Q. Why do you disconnect the line between Wrightstown and Hightstown?

A. The two systems are not running parallel and, as a matter of fact, they could not be.

Q. At that point, you mean?

A. Yes.

Q. The New Lisbon connection is usually closed, isn't it?

A. Always closed.

Q. It is always closed?

A. Yes.

Q. And that serves the immediate area?

A. That is right.

Q. There is no interchange of power at this point with Public Service in the sense that any power is delivered by Jersey Central to Public Service?

A. That is true.

Q. It goes only one way?

A. That is right.

Q. Will you describe the area in the vicinity of Lisbon to which Jersey Central affords service?

A. It is a small rural territory.

Q. Small in area or small in number of customers?

A. Small in number of customers.

Q. And Wrightstown is very close to New Lisbon, isn't it?

A. Yes, sir.

Q. And the territory in the neighborhood of Wrightstown, Trembly towards Hightstown is what kind of an area?

A. A rural territory, very small towns.

Q. Domestic service and farm service?

A. That is correct?

Q. There is no power industry in that area?

A. No, sir.

Q. I might ask you one other question. Why don't

you serve that area from your own generating facilities?

A. Because we do not have the proper transmission facilities to get our power down there. We have plenty of power but we can not get it down to this point.

Q. Would the business there justify the investment to put in proper transmission facilities?

A. No; it does not.

Q. And it is more economical to buy your power at that point from Public Service?

A. That is true.

Q. Now, let's go to the Boonton connection. Where is that connection?

A. At Boonton.

Q. How does power come into that station? Just describe the connection, please.

A. The New Jersey Power and Light Company has a line coming from West Wharton to Boonton.

Q. How far is West Wharton from Boonton?

A. I believe it is twelve or fifteen miles.

Q. Both points being in New Jersey?

A. That is correct.

Q. What voltage does this power come into West Wharton?

A. Thirty-three thousand volts.

Q. I mean on the Jersey Central system.

A. One hundred ten thousand.

Q. And it is transformed to 33,000 volts?

A. Yes.

Q. And delivered to the Boonton connection at the same voltage?

A. That is correct.

Q. What is the purpose of the Boonton connection?

A. That is for emergency service.

Q. And to supply what part of your territory?

A. The northern section of our northern division, which means from Boonton north to Butler and Pompton Lakes.

Q. In that area you have customers which take energy at 33,000 volts?

A. Yes.

Q You have some large power industries in that area?

A. That is correct.

Q. How is the switch at the Boonton connection ordinarily?

A It is ordinarily open.

Q. Do you know how many transactions have taken place between Jersey Central and New Jersey Power and Light Company in the year 1937 at the Boonton connection?

A. I do not have those data with me. I have here the kilowatt hours purchased.

Q. That is what I mean.

A. And the kilowatt hours sold during the year 1937.

Q. What was the quantity of kilowatt hours purchased and sold during 1937? That is what I meant by my question.

A. Fifteen hundred k. w. h.; and 100 k. w. h. were purchased.

BY MR. McALLISTER:

Q. What was the figure sold?

A. Thirty-three hundred.

MR. McALLISTER: I would like to ask, if I may, which way that moved. Who was the purchaser and who was the seller?

BY MR. ATTENRIETH:

Q. The 3300 was sold by Jersey Central to New Jersey Power and Light?

A. No.

Q. How was it?

A. Jersey Central purchased 3300 kilowatt hours and sold 100 kilowatt hours.

Q. Now, in the year 1936 what were the kilowatt hours sold and purchased?

A. In 1936 Jersey Central Power and Light Company purchased 74,600 kilowatt hours and sold 183,200 kilowatt hours.

Q. Have you the information as to 1935 on the same subject?

A. Yes.

Q. Will you please state that?

A. In 1935 Jersey Central purchased 2700 kilowatt hours and sold 8200 kilowatt hours.

Q. That includes the entire year 1935, does it not?

A. Yes, sir. Well, no; it is only shown for August, September and December as the months when it was sold.

Q. It is since the effective date of the Federal Power Act? Isn't that correct?

A. Yes, sir. I imagine that is including August and after August.

Q. For the year 1935?

A. Yes.

Q. In the year 1938 up to March 14th were there any kilowatt hours purchased or sold?

A. I have the month of March here but I am not sure whether that was before the 14th of March or after the 14th of March.

Q. Can you check that? I want to get anything prior to that date.

A. I am sorry, but I do not have it.

Q. And you do not recall?

A. No, sir.

Q. Do you know the date?

A. It is just given as March. There is no date given.

Q. Tell us what the transaction is, anyway. We may be able to supply the date later.

A. Jersey Central purchased 21,300 and sold 52,300.

Q. All of this interchange is emergency power?

A. Yes, sir.

Q. You do not sell firm power to New Jersey Power and Light?

A. No, sir.

Q. In fact, Jersey Central does not sell firm power to any other company?

A. No, sir.

Q. Returning to the South Amboy-Perth Amboy connection, there is one other point with relation to the verbal contract that you have. Is there any understanding between the parties as to whether it is terminable upon notice or without notice?

A. The economy flow?

Q. Yes.

A. It is understood that can be canceled at any time.

Q. Mr. Crumley, can you say whether or not the requirements of Staten Island Edison Corporation at any time have entered into the contractual arrangements which you have with Public Service Electric and Gas Company?

A. No; it never did.

Q. Were Staten Island requirements ever discussed?

A. No, sir. Our arrangements are with Public Service.

Q. Your arrangements are exclusively with Public Service?

A. Yes, sir; that is correct.

Q. And, so far as you know, it is delivered into their system?

A. That is true.

Q. Have you any knowledge as to what they do with it?

A. No, sir; I have not.

Q. Will you please describe how the energy moves

from the South Amboy plant over to Public Service Electric and Gas Company?

A. We generate at the South Amboy plant at 13,200 volts. The energy passes through an oil switch and metering equipment to a 25,000 k. v. a. transformer.

Q. Located where?

A. Right at our plant.

Q. Will you proceed, please?

A. From there over two overhead transmission lines to the south bank of the Raritan River, where it enters cables that go under the river, on the north side of the river the two lines are brought up overhead and go to the Mechanic Street Substation of Public Service Electric and Gas Company.

Q. What company owns the submarine cable?

A. Public Service Electric and Gas Company.

Q. What would you say is the distance of the line owned by Jersey Central Power and Light Company from its generating plant to the south bank of the Raritan River?

A. About seven-eighths of a mile.

Q. Does Jersey Central Power and Light Company own any transmission lines that extend beyond the borders of the State of New Jersey?

A. No, sir.

Q. Or that go to the border line of the State of New Jersey?

A. No, sir; they do not.

Q. How far would you say that Wrightstown connection is from the boundary of the State of New Jersey by line distance?

A. By line distance?

Q. Yes.

A. I would say about 40 miles to 45 miles.

Q. How far would you say the Boonton connection is

by line distance from the nearest boundary of the State of New Jersey?

A. I think it is about 45 miles.

Q. From South Amboy how far is it to the State boundary?

A. By line distance?

Q. Yes.

A. I think it is about five miles.

Q. That is from the south bank of the Raritan River?

A. To Mechanic Street substation, and from there to the boundary.

Q. From there to the State boundary?

A. That is right.

Q. In the operation of this economy flow you say the general trend of the flow is toward Public Service?

A. That is correct.

Q. And you have given your reasons for that?

A. Yes, sir.

Q. As an engineer, is there such a thing as incidental trend of flow or slopover, or whatever other name you choose to give it?

A. Yes; there is.

Q. Will you just describe what that is?

A. If Public Service Electric and Gas Company desires to stop buying economy flow energy our system is brought into balance with Public Service. We speak of it as balance. If all conditions remained the same on both systems we could probably keep the two systems in balance and no energy would be transferred.

Q. In either direction?

A. In either direction. But conditions are changing all of the time on the two systems and that causes current to flow from one system to the other, and there is no way to prevent that from happening.

Q. Uncontrolled energy?

A. Yes; uncontrolled energy. We try as far as

possible to balance it out, if we can induce the Public Service Electric and Gas Company at that time, by taking incidental energy from them in order to balance it out.

Q. So your payment for this economy flow would be largely reflected in the definite quantities ordered from time to time?

A. That is right.

Q. All of this energy that passes in this way is billed on the economy flow basis pursuant to the contract?

A. Yes.

Q. There is no energy billed to Public Service Electric and Gas Company on the basis of firm power?

A. No.

Q. You do not serve them with firm power?

A. That is right.

Q. Have you before you any record of the amount of kilowatt hours taken as emergency from Public Service Electric and Gas Company at this South Amboy connection for the year 1937?

A. There was none during the year 1937.

Q. Has there been any during the year 1938 up to March 14th?

A. No, sir.

Q. Has there been any in 1936?

A. There were two instances in 1936. On July 11, 1936, we purchased 3,225 kilowatt hours. On December 10, 1936, there was an instantaneous demand of 234 k. w. taken from Public Service, but the period of time was so small that no kilowatt hours were recorded.

BY MR. McALLISTER:

Q. What was the last date you gave?

A. December 10, 1936.

BY MR. AUTENRIETH:

Q. What would you say is the annual profit on this economy flow energy that Jersey Central has supplied to

Public Service Electric and Gas Company at this point?

A. It is probably running now somewhere in the neighborhood of $10,000 a year.

Q. That is a fair average for the year 1937 and 1938 as well?

A. I think so; yes.

Q. What is the total gross revenue of Jersey Central Power and Light Company electrically?

A. About $9,000,000.

Q. For the year 1937?

A. Yes.

Q. So this profit is relatively a very small part of the business of the Jersey Central Power and Light Company, is it not?

A. Yes; relatively it is small.

Q. Relatively it is very small?

A. Yes, sir.

Q. I call your attention to the contract with New Jersey Power and Light Company dated February 6, 1937, which is marked Intervener's Exhibit No. 4. That contract provides for the supplying by Jersey Central Power and Light Company of firm power to New Jersey Power and Light Company, doesn't it?

A. Yes, sir.

Q. It is not now being supplied?

A. That is correct.

Q. Will you state why?

A. Because the facilities have not been built by New Jersey Power and Light Company to take the power.

Q. And firm power has never been supplied under this contract?

A. No, sir.

Q. And the minimum charges which under this contract do not take effect until the service is put into effect? Is that correct?

A. That is correct.

Q. In a sense that contract is presently inoperative so far as firm power is concerned?

A. That is correct.

Q. With respect to the economy flow to Public Service Electric and Gas Company at South Amboy, has Jersey Central Power and Light Company any control over that energy after it leaves its meters?

A. None whatever.

Q. And, so far as you know, it is merely delivered to the Public Service system?

A. That is true.

Q. Jersey Central Power and Light Company is a public utility of the State of New Jersey, is it not?

A. It is.

Q. And it is subject to the jurisdiction of the Public Utility Commissioners of New Jersey?

A. It is.

Q. Briefly, Mr. Crumley, will you state what the scope of jurisdiction is over Jersey Central Power and Light Company?

A. The Utility Commission of New Jersey has jurisdiction over our rates, our standards of service, contracts, and the issuance of securities.

Q. The transfer of securities as well?

A. That is true. As a matter of fact, it is almost every aspect of our business.

Q. Does it have jurisdiction over mergers and consolidations?

A. It has.

Q. And the sale of lands and property?

A. Yes, sir.

Q. And without mentioning it, I suppose general miscellaneous jurisdictions which you have not mentioned?

A. That is true.

MR. AUTENRIETH: I would like to offer in evidence the statute of New Jersey defining the jurisdic-

tion of the Commission, but I do not want to offer it in evidence physically, if Your Honor will take judicial notice of the statute. I can't supply you with a pamphlet there. I want to make it by reference.

EXAMINER SPENCER: Judicial notice will be taken of the statute of the State.

BY MR. AUTENRIETH:

Q. All of the present securities of Jersey Central Power and Light Company now outstanding to which you referred in your earlier testimony were issued pursuant to the authority of that Commission, were they not?

A. They were.

Q. And the transfer of the common stock to New Jersey Power and Light Company—about 32 per cent, I believe—concerning which this investigation refers, was also approved by the New Jersey Public Utility Commission, was it not?

A. It was.

Q. And that transfer has actually been recorded on the books of the company?

A. It has.

Q. Your rates, are they filed with the New Jersey Commission?

A. Yes, sir; they are.

Q. And included among your rate schedules are these contracts which have been offered in evidence, which are also filed as part of your rate schedules?

A. They have been filed.

Q. With respect to this verbal contract, obviously you can not file that. But what is the status of that situation with respect to the New Jersey Commission?

A. We report to the New Jersey Commission all transactions in connection with this economy flow energy, including the kilowatt hours and the revenue, in monthly reports which are submitted to them monthly.

Q. And they are filed with the Commission?

A. Yes, sir.

Q. And to the best of your knowledge do they show about this transaction and the arrangement?

A. The engineers of the Utility Commission have looked into this arrangement.

Q. Reference has been made in these proceedings to reports and data filed with the Federal Power Commission by Jersey Central Power and Light Company. I understand you have filed various reports with this Commission at various times?

A. We have.

Q. Were those filed by the company with any reservations as to jurisdiction?

A. All of these reports have been filed as a matter of courtesy to the Commission, and I believe in all cases we have so specified that we are filing the information as a matter of courtesy and reserved our right to say that we are not under the jurisdiction of the Federal Power Commission.

Q. You never considered the Jersey Central Power and Light Company was engaged in interstate commerce so far as the transmission of electric energy is concerned?

A. No; I have never considered it so.

MR. AUTENRIETH: I think I am about through, if Your Honor will indulge me for just a moment so that I can see whether I have any other questions.

EXAMINER SPENCER: All right.

BY MR. AUTENRIETH:

Q. I have just one or two more questions, Mr. Crumley. In this interchange of economy flow, or emergency power, for that matter, does the Public Service Electric and Gas Company in ordering, so to speak, power from Jersey

Central Power and Light Company ever declare why it needs this power and what its purpose is?

A. Not so far as I know. It is all done on a matter of cost of production.

Q. For example, does the transaction say, "We need power for a power pool or for Staten Island"?

A. No, sir.

Q. Has that ever entered into the transaction?

A. No, sir.

Q And, so far as you know, the transaction is merely a delivery to Public Service Electric and Gas Company for whatever their requirements may be?

A. That is correct.

Q. Have you any contracts or understandings that Jersey Central receives power from a power pool or from Staten Island or from any other place except Public Service Electric and Gas Company?

A. Will you please repeat that question?

Q. Jersey Central Power and Light Company is not part of a so-called power pool, is it?

A. No, sir.

Q. Your transactions relate solely to obtaining energy from Public Service Electric and Gas Company?

A. Yes, sir.

Q. Regardless of its source?

A. Yes, sir; that is correct.

MR. AUTENRIETH: That is all. You may cross examine.

EXAMINER SPENCER: You do not wish to cross examine, Mr. Paxson?

MR. PAXSON: No, not at this time.

EXAMINER SPENCER: The witness is with you, Mr. McAllister.

MR. McALLISTER: Mr. Examiner, may we have

a few minutes recess in order to simplify the matter?

EXAMINER SPENCER: For how long, Mr. McAllister?.

MR. McALLISTER: For about five minutes, Mr. Examiner.

EXAMINER SPENCER: We will recess at this time for five minutes.

(Thereupon a short recess was taken, after which the following occurred:)

EXAMINER SPENCER: The hearing will be resumed. You may proceed, Mr. McAllister.

Cross Examination

BY MR. McALLISTER:

Q. Mr. Crumley, some point was made yesterday of the manner in which the connection at Comical Corners was designated in reports which you filed with the Federal Power Commission. One of those reports designated the connection as Wrightstown-New Lisbon connection. Another report designated that connection as Wrightstown-Comical Corners.

Is that difference of such nature that it would be misleading to you as the president of your company?

I mean that variation wherein you call the connection at one time Wrightstown-New Lisbon and at another time Wrightstown-Comical Corners?

A. Well, it would not be misleading to me. It might be to someone else.

Q. Is it the same connection?

A. Yes. As I described a while ago the line comes to Comical Corners and divides at that point and one line goes to Wrightstown and one line goes to New Lisbon.

Q. Why would you in one report designate in one manner and in another report designate it in another manner, if that wasn't a usual term that might be applied? I mean if those two terms were not usual terms that might be applied to that connection.

A. The report might be made up by two different men who would describe the same connection in different words.

Q. Is it an error of any significance or consequence?

A. I should say not; no, sir.

Q. Would it mislead the other party to the interconnection arrangement at that point?

A. I don't think so, and it certainly was not intended to mislead anybody. I think it was a difference in wording probably made up at different times.

Q. Do you have different plants or other connections where one person today might designate it by one name and tomorrow by a different designation, the two being in more or less common usage?

A. I don't think so. It certainly would not apply to an important connection. This is rather an insignificant connection. It hasn't happened to my knowledge.

Q. What do you mean?

A. That the other connections have been described in different ways.

Q. Well, there is one plant in that area you sometimes refer to as the Holland plant and another time as the Gilbert plant.

MR. PAXSON: Just one moment, those plants are not in your plants, are they?

THE WITNESS: No.

BY MR. McALLISTER:

Q. But you know about that plant, do you not, Mr. Crumley?

A. Yes, sir.

Q. Isn't it true it is sometimes referred to as the Holland plant and sometimes as the Gilbert plant?

A. In talking to engineers, sometimes they do that.

Q. What I am trying to bring out is the mere fact you refer to it one time as the Gilbert plant and another time as the Holland plant doesn't have any real significance, does it?

A. I can't answer for New Jersey Power and Light Company. I don't know what they state on their reports.

Q. I know, but would that be such a variation that would mislead you in any respect?

A. No, it would not. I would know what plant they were referring to.

Q. Mr. Crumley, I hand you a report, which is labeled annual report of Jersey Central Power and Light Company to the Federal Power Commission for the year ended December 31, 1937, which was received in the Federal Power Commission on April 29, 1938, and which bears the signature of T. R. Crumley, as president of that company. I ask you if that is your signature and if that is the report that was filed by your company?

A. It is my signature and that is the report filed by our company.

Q. And that report shows on page 522 a description of a connection with Public Service Electric and Gas Company which you describe as Conical Corners-Wrightstown, isn't that true?

A. That is true.

Q. And that is correct, is it, that description and designation?

A. I believe a better definition would be Wrightstown and New Lisbon.

Q. Wrightstown and New Lisbon?

A. Yes, I think that would be better than the way it is stated there.

Q. But is that an adequate description?

A. I think so; yes, sir.

Q. You think it is?

A. Yes.

Q. I also show you a report designated Electric Utilities Licensees' Power System statement for the year ended December 31, 1937, made by Jersey Central Power and Light Company, which was filed with the Federal Power Commission on July 16, 1938, and which was signed by T. R. Crumley, as president, and ask you if that is the report made by you as president of the Jersey Central Power and Light Company, and if that is your signature?

A. That is my signature. The report was prepared by our general auditor.

Q. And in that report you refer to that connection with the Public Service Edison and Gas Company in and around or adjacent to New Lisbon or Wrightstown, New Jersey, as—

MR. PAXSON: (interposing) Pardon me, I can't hear for the post between us.

BY MR. McALLISTER:

Q. Referred to as New Lisbon and Wrightstown, New Jersey, connection. Is that correct?

A. That is correct.

Q. That is the same connection, is it not, that was referred to in the other report as Wrightstown and Conical Corners?

A. Yes, that is true.

Q. Mr. Crumley, I show you a letter signed by T. R. Crumley, President, on the stationery of Jersey Central Power and Light Company, under date of April 27, 1938, addressed to R. H. Barkley, Regional Director, Federal Power Commission, 641 Washington Street, New York City, to which is attached a statement labeled Interchange of Power between Jersey Central Power and Light Company and Public Service Electric and Gas Company at South Amboy, New Jersey, from January 1, 1937, to April 23, 1938, and ask you if that is a communication sent by you and if that is your signature?

A. That is my signature and that is the information which I supplied to the Federal Power Commission.

Q. Is that information contained in the statement which accompanied your letter accurate and complete?

A. I think so.

Q. From what source was that information obtained?

A. From our records.

Q. From your records?

A. Yes, sir.

Q. That is not based upon information that you carry around in your head, is it?

A. No.

Q. In other words, Mr. Crumley, if you wanted to know what was the interchange of power for any particular date in 1937, 1938, or any prior period, from what source would you obtain that information?

A. From the records of the company.

Q. And would you rely upon such records?

A. Yes, sir.

Q. Is there any other source from which you could obtain that information?

A. No, not unless I asked the Public Service Electric and Gas for it.

Q. The other party to the arrangement who would have a record of the power which they received from you?

A. That is correct.

Q. From what source would they obtain that information?

MR. PAXSON: Objected to. They would not know—

BY MR. McALLISTER:

Q. (interposing) Where would you expect them to get their information, Mr. Crumley?

A. From their own records.

Q. From their own records, and those records would be records obtained in what manner?

MR. PAXSON: That is objected to.

EXAMINER SPENCER: I sustain the objection.

MR. PAXSON: I ask for an offer of proof.

EXAMINER SPENCER: It doesn't appear from any knowledge of the witness. The objection is sustained.

MR. PAXSON: It might be all right, I don't know.

BY MR. McALLISTER:

Q. Mr. Crumley, in your usual course of business if you were undertaking to determine the energy you had received at your connection with another company, from what records would you obtain that information?

A. From our own company records.

Q. Of what nature?

A. The log sheets which are made in our power plant at South Amboy?

Q. I said the power which you received from one of your connections.

A. Yes, they would be on our log sheets, that information.

Q. What log sheets, at South Amboy or at the substation where you receive the power?

A. Well, South Amboy is the place where we receive the power.

Q. Now let's step on west to the connection which you referred to at—

A. (interposing) Wrightstown and New Lisbon?

Q. Let's take Wrightstown and New Lisbon. What records do you have there showing the energy you receive?

A. We have bills submitted monthly by the Public Service Electric and Gas Company for the power they supply to us.

Q. You don't meter that as it comes in yourself?

A. They own the meters.

Q. They own the meters?

A. Yes. We are billed as any other customers of theirs would be billed.

Q. How about energy that you receive at Boonton?

A. We would get information on that source from our Boonton substation, from the log sheets kept at our Boonton substation.

Q. Is it customary to rely upon records that are kept at a substation?

A. Oh, yes.

Q. You say that is correct?

A. Yes, sir.

Q. And what is the reason for keeping log sheets at the substations?

A. In order that we might have a record of what takes place so that we can check bills that we might receive from New Jersey Power and Light Company or check bills that we send to the New Jersey Power and Light Company. That is the source of our information.

Q. Now did the log sheets at that substation as well as other substations which you operate, do those log sheets show other information also as to what is transpiring on the transmission line?

A. Yes, it shows the meter readings that are taken hourly so that we know the amount of power coming in and going out on the different circuits.

Q. Is that information that is contained on those log sheets information which you use in the ordinary course of your business in so far as it relates to that information which you say is shown by those readings?

A. Yes, sir.

Q. Would that be your only source of information as to what transpires on those lines? I mean eliminating what information you might be able to receive from some other substation, that would likewise contain a reading

as to the movement of energy on that same line, or one of them?

A. Yes, I would say so.

Q. In other words, by standing around the substation all day you would acquire no information if you didn't go to the indicating instruments that are on the board?

A. Well our substation operators are instructed to take this information off the instruments and record it on the log sheets.

Q. And except from those log sheets as to the past transactions you have no information as to what is transpiring in that substation?

A. No, the information, part of the information at least is taken from those log sheets and is recorded in our operating reports monthly.

Q. In other words, subsequent to the taking of the information the log sheets are utilized as a source for information which you transpose into your monthly reports?

A. That is correct.

Q. I am merely trying to see whether or not you have confidence in those reports, and place reliance upon them?

A. I do.

Q. In other words, those log sheets that are kept in the substation are, so to speak, the books of what transpired during that particular time?

A. Yes.

Q. What is your answer to that?

A. Yes.

MR. McALLISTER: Before I leave this question, Mr. Examiner, I would like to offer for the record a photostatic copy of the letter and report identified by Mr. Crumley as having been submitted by him to the Federal Power Commission and which he says is

true and correct. I offer that as Commission's Exhibit No. 20.

EXAMINER SPENCER: Any objection?

MR. PAXSON: Just a moment. I don't know whether it has any reference to the case or not.

MR. McALLISTER: You interrupted me.

MR. PAXSON: I was asking the question of the Examiner if I had any objection. You interrupted while he was asking me the question.

BY MR. McALLISTER:

Q. Here is the original, Mr. Crumley, and if you care to, compare it with that to see if that is complete.

A. That is complete.

MR. McALLISTER: As I attempted to say, Mr. Examiner, I would like to offer that as Commission's Exhibit No. 20.

MR. PAXSON: If the Commission please, I object to the introduction as an exhibit in this case any part of this proposed exhibit which refers to any transactions which may have occurred subsequent to March 14, 1938. Otherwise I have no objection.

EXAMINER SPENCER: Let the record show that the letter and attached statement is admitted as Commission counsel's Exhibit No. 20 over the objection of counsel for the respondent to that part thereof referring to any transactions subsequent to March 14, 1938.

(The document referred to was marked Commission's Exhibit No. 20 and received in evidence.)

BY MR. McALLISTER:

Q. Mr. Crumley, is there any new construction in

progress tying Jersey Central Power & Light with New Jersey Power & Light Company as appears to be in contemplation pursuant to the provisions of the contract between those parties, dated February 6, 1937?

A. No, there isn't any construction.

Q. There has been no construction up to this time undertaking to tie those lines together as is indicated in that contract to be the thought of the parties to the contract, that is, Jersey Central and New Jersey Power & Light Company?

A. There has been no construction.

Q. Prior to that contract of February 6, 1937, under the terms of the contract which was superseded you were under obligations to pay to New Jersey Power & Light Company a demand charge of $1,000 per month, isn't that true?

A. That is true.

Q. Now, under the new contract, the contract dated February 6, 1937, you no longer have that obligation to pay that demand charge of $1,000 a month?

A. That is true.

Q. That is eliminated?

A. Yes.

Q. So that today you receive whatever power you receive under the terms of that contract without the obligation attached by reason of this demand charge?

A. That is correct.

Q. That contract does provide, however, that when this further connection, which is to be constructed, and which you say has not yet been started, when that connection is made then New Jersey Power & Light Company will be under obligation to pay to you a demand charge without, on your part, there being any obligation to pay any demand charge to them?

A. That is true.

Q. What is that demand charge which they will be

called upon to pay to you when that provision of the contract becomes fully effective?

A. I would like to refresh my memory by looking at the contract.

Q. Mr. Crumley, I didn't know you looked at contracts.

EXAMINER SPENCER: He may refresh his memory. It is in evidence.

MR. McALLISTER: I was merely referring to the comments of counsel as to Mr. Grimsley refreshing his memory.

EXAMINER SPENCER: Mr. Grimsley was permitted to refresh his memory. Proceed.

THE WITNESS: The existing contract calls for a demand charge of $2,500 a month to be paid by New Jersey Power & Light Company to Jersey Central Power & Light Company when this connection is established.

BY MR. McALLISTER:

Q. I believe you stated, Mr. Crumley, that the Boonton connection was an emergency connection?

A. That is correct.

Q. That that connection remained open except at times when under an emergency, power was being delivered and of course then the connection would be closed?

A. That is right.

Q. Can you tell me how many times that connection was closed in 1937?

A. I don't have the data with me for the complete year of 1937.

Q. Well if that information was obtained from your company, on what records would you expect to find it?

A. From our log sheets.

Q. The log sheets at what substation?

A. At Boonton.

Q. At Boonton?

A. Yes, sir.

Q. You have certain of the information for 1937, do you, though?

A. I have.

Q. Well so far as you do have it, will you state it for the record, giving the dates?

A. On June 6, 1937, the connection was closed and we purchased, I think it was, 900 kilowatt hours, due to the fact our line was out between Whippany and Chatham.

On June 21, 1937 we purchased 200 kilowatt hours, the switch being closed due to the fact that lines were out, our lines were out between Whippany and Boonton.

On July 15th, for the same reason, the connection was closed. I am sorry this copy is so indistinct I can't tell whether it is 2,300 or 2,500.

Q. See if that will magnify it.

A. Will you show me a better copy?

Q. I don't know who supplied it to you. If any of your engineers have a better copy—

MR. PAXSON: If you will just wait a minute we will see if we can find one.

EXAMINER SPENCER: We will wait a minute.

MR. AUTENRIETH: I guess you will have to battle with that one. Oh, here is a better one.

EXAMINER SPENCER: All right, sir, proceed.

THE WITNESS: It was 2,200.

BY MR. McALLISTER:

Q. 2,200?

A. That is correct.

Q. Were those all the connections that were made, or are those the only times that switch was closed in 1937?

A. Well, from June on. From June on.

BY MR. AUTENRIETH:

Q. Is that from June on? I think there may be an error. If there is I want to correct it before we go too far.

A. That is right, it shows from January, 1937, to September 1938. So, that must have been the only three cases in that year, 1937.

BY MR. McALLISTER:

Q. Now will you give us the same information for the year 1938? In other words read in all the connections which you have for the period which is shown on the statement.

MR. PAXSON: If the Commission please, I object to the receipt of any testimony showing any transactions subsequent to March 14, 1938. I have no objection to any prior to that.

MR. McALLISTER: The information which the witness has goes up to a certain date in September and I ask that the entire information be submitted for the information of the Commission as being vital as to a showing as to just what this means.

MR. AUTENRIETH: Why not have the paper offered subject to objection?

MR. McALLISTER: I am having the information read on cross-examination.

MR. AUTENRIETH: Suit yourself.

EXAMINER SPENCER: The proceeding is somewhat irregular so far as the rules of practice are concerned in that on cross-examination the counsel for

the Commission is offering direct testimony.

MR. McALLISTER: Mr. Examiner, that isn't true. He says there were only incidental connections. I am not going beyond his direct examination.

MR. AUTENRIETH: If the Commission please, he didn't say it was incidental, it was only emergency.

EXAMINER SPENCER: I will make a ruling on this, whether my statement was true or untrue. The record will stand as I dictate it. Let the objection of counsel for respondent be noted as stated. That is, that he objects to any testimony on this cross-examination referring to any items subsequent to March 14, 1938, and the witness may proceed.

THE WITNESS: On March 24, 1938, the switch was closed evidently for just a moment and no energy was transferred.

On March 25, 1938, the connection was closed on account of a test we were making on the two systems. At that time 11,600 kilowatt hours were purchased.

On March 27, 1938, 9,700 kilowatt hours were purchased, the connection being closed on account of line work being done between Whippany and Boonton.

On April 11th, 700 kilowatt hours were purchased. The occasion that time was frequency regulation. We were disconnected from Public Service at that time and we connected with another system in order to keep our clocks and everything going.

May 1, 19,500 kilowatts were purchased, due to line work being done between Whippany and Boonton.

May 3rd, 1,100 kilowatts purchased account of frequency regulation again.

May 9th, 1,100 kilowatts purchased. Reason plant trouble at Raritan River plant.

June 1st, around 9,500 kilowatt hours purchased. Line trouble between Whippany and Boonton.

June 12th, 100 kilowatt hours purchased, same reason.

July 2nd, 9,900 kilowatt hours purchased, work on lines between Whippany and Boonton.

August 1st, 8,900 kilowatt hours purchased, tree on line between Whippany and Boonton.

BY MR. McALLISTER:

Q. Mr. Crumley, the importance of an emergency connection is not measured by the frequency with which a connection is closed, is it?

A. Well, I would say the importance does depend on how often you use it. But it might still be important, though, even if it were only used once or twice, that is true.

Q. Do you think this connection from the time that switch was closed, as indicated from the information you have just read into the record indicates that you do rely upon that connection when the line between Whippany and Boonton is out of service?

A. That is true.

Q. Mr. Crumley, at points of interchange, when the lines are operated with the switches closed and there is a surge of power from one company to the other, what becomes of that power in so far as the receiving company is concerned?

MR. PAXSON: Just a moment. Is he asking his opinion as an expert engineer generally or is he confining it to any particular company or service?

EXAMINER SPENCER: What do you mean

there? These connections with Jersey Central lines or other interconnections?

MR. McALLISTER: What did you say, Mr. Examiner?

EXAMINER SPENCER: The Jersey Central connections? You are referring to the Jersey Central connections?

MR. McALLISTER: I am merely asking the question. I haven't related it to any particular point, Mr. Examiner. I am asking him the question. If he can answer the question as it is stated, all right.

EXAMINER SPENCER: Read the question, Mr. Reporter.

(The reporter thereupon read the pending question as recorded.)

EXAMINER SPENCER: That does not relate to any particular company.

MR. McALLISTER: That relates to an answer which he made upon direct examination that that power does come in and it was referred to as incidental flow and slop-over.

MR. AUTENRIETH: I object to that because there is no testimony at Boonton there is any incidental or slop-over energy, and this question, if it is going to be stated generally, I move it be stricken as all slop-over and incidental energy is at South Amboy. Besides, that doesn't seem to be cross-examination.

EXAMINER SPENCER: There is direct testimony there was an interchange of current on occasions there.

MR. AUTENRIETH: Emergency at Boonton, slop-over and incidental was confined to South Amboy. Our contract says it was an emergency interchange.

EXAMINER SPENCER: The witness will recall whether on his direct examination he testified it was slop over or incidental energy at the point.

Mr. McAllister, can you confine your question—

MR. McALLISTER: (interposing) Mr. Examiner, I have asked him a perfectly fair question. I have not referred to Boonton and the witness knows full well, if you will read the question, I am not referring to Boonton. I prefaced the question by the switches being closed, and at Boonton he testified—

EXAMINER SPENCER: (interposing) The other connection is where?

MR. McALLISTER: What other? There are a lot of connections.

EXAMINER SPENCER: That he testified about? The one at Boonton and New Lisbon?

MR. McALLISTER: Wrightstown, New Lisbon, Conical Corners and Wrightstown are the same thing; and between South Amboy and Mechanic Street.

EXAMINER SPENCER: Mr. Reporter, read the question previous to the last one.

(The reporter thereupon read the question referred to as follows:)

"Q. Do you think this connection from the time that switch was closed, as indicated from the information you have just read into the record, indicates that you do rely upon that connection when the line between Whippany and Boonton is out of service?"

EXAMINER SPENCER: Now read the next one.

(The reporter thereupon read the pending question as recorded.)

EXAMINER SPENCER: Let the witness answer.

MR. PAXSON: I want to know whether this is a hypothetical question. I may not have any objection to it being answered, or whether it is to be confined to any facts or circumstances.

EXAMINER SPENCER: As he has stated, the two questions considered together would tie it in to the particular place. You may answer.

THE WITNESS: A surge of power would be absorbed into the system of the receiving company.

BY MR. McALLISTER:

Q. And utilized?

A. Yes, sir.

Q. Mr. Crumley, when power, electric energy on a line is utilized, by that do you mean it is converted into light, heat or power?

A. It is ordinarily sold to the customers and converted into light, heat or power, yes.

Q. Is it a fact, Mr. Crumley, ability to generate electricity, electrical energy, exist only simultaneously with consumption?

A. Yes, the transaction is instantaneous.

Q. In other words, if you have a generator on a line without any load other than the incidental energy produced to keep that line hot, that generator will not produce further energy than that requirement, is that true?

A. That is true.

Q. If over a certain connection you deliver a thou-

sand kilowatt hours of electrical energy, stated in horse-power what does that amount to?

A. A thousand kilowatt hours?

Q. A thousand kilowatts is what I should say. Hours would be the duration of the operation.

A. A thousand would produce roughly one and three-tenths times that.

Q. In other words something roughly over 1,300 horse power?

A. Yes, sir.

Q. And that stated in kilowatt hours would mean a thousand kilowatt hours would operate motors producing approximately 1,300 horse power over a period of an hour?

A. One hour; yes, sir.

Q. Generally speaking what was the horse-power required on an ordinary elevator in an office building such as this one here, if you know, Mr. Crumley?

A. No, it has been so long since I dealt with anything like that I don't recall.

Q. But would it be anywhere between 10 and 20 horse-power?

A. For one elevator?

Q. One elevator.

A. Yes, I guess so, somewhere in that neighborhood.

Q. Have you any information as to the lighting load that would develop from the lighting of a building the size of this building, twelve stories, if all the lights were burned, stated in kilowatts?

A. No, I don't know much about this building. I never saw it until two days ago.

Q. Any twelve story building of an ordinary size, within a range?

A. As I stated before I haven't dealt with those things for quite a while. I would suppose 50 to 100 kilowatts.

Q. So that a thousand kilowatts is a sizable piece of power when it is related to the work that it will do?

A. Yes, sir.

Q. Your answer is yes?

A. Yes.

Q. Through your connection at Wrightstown and New Lisbon, you purchase electrical energy from whom, is that the New Jersey Power & Light Company?

A. No, Public Service Electric and Gas Company.

Q. Public Service and Gas Company?

A. Yes, sir.

Q. I believe you stated on direct examination that you purchased power there to supply that area?

A. Yes, sir.

Q. Through your own distribution system?

A. That is correct.

Q. And that although you have adequate capacity on your system which would indicate an ability to furnish energy to that area, you do not have the necessary transmission lines to carry the energy to that location?

A. That is true.

Q. And it is more economical for you under the circumstances to purchase the energy from Public Service Electric and Gas Company to serve that area, and that, therefore you have not constructed the necessary transmission lines?

A. I can express it better by saying adequate lines. We have a line now from Hightstown to New Egypt, but it is too light and will require quite an investment to build an adequate line and the investment isn't justified by the small amount of business we have.

Q. Reliability is a factor to be taken into consideration in determining whether or not you will maintain certain connections?

A. Yes, sir.

Q. Reliability is a factor to be taken into consideration in determining whether or not you will construct certain transmission lines?

A. Yes, sir.

Q. And because it is desirable and indicated by good operating practice to furnish reliable service to the area which you serve locally in that district you have seen fit to make this connection which is designated as the Wrightstown-New Lisbon connection with Public Service Electric and Gas Company?

A. That is right.

Q. And it is necessary to furnish the kind of service that you desire to furnish to that community that you maintain that connection?

A. Yes, sir.

Q. And is important in that regard?

A. Yes, sir.

Q. Is it a common practice, Mr. Crumley, if you know, among other public utilities to purchase energy for delivery to one part of their system when their total capacity might indicate that they have or could produce sufficient energy to supply it, due to the fact that that area may be far removed from the points of production or generation?

A. I would say that is the common practice, yes.

Q. Would you say, Mr. Crumley, the importance of an interconnection with another operating utility is magnified by reason of the fact that the utility desiring the connection is only operating on its lines sufficient capacity to barely meet its load?

A. Under those conditions I think the interconnection becomes more necessary and more valuable.

Q. And would you say that it is vital to such a system if they are to be in a position to supply reliably the demands that might come upon them?

A. That all has to be figured out for each particular case, but—

Q. (interposing) But as you—

MR. AUTENRIETH: (interposing) Let hi finish.

BY MR. McALLISTER:

Q. Go ahead.

A. In a hypothetical case which you have just expressed where the receiving company has only enough generators on the line to barely take care of their load, the interconnection becomes very important.

MR. McALLISTER: Mr. Examiner, it is approaching 12:30 and if we might have a recess from now until two o'clock I believe I could complete the cross-examination of Mr. Crumley rather more quickly than going over my notes as they are here.

EXAMINER SPENCER: How many witnesses will you have?

MR. AUTENRIETH: I have no witnesses except Mr. Crumley.

EXAMINER SPENCER: How many have you?

MR. PAXSON: I have three witnesses.

EXAMINER SPENCER: We will recess until 1:30. Will that be sufficient time?

MR. McALLISTER: I would like to eat and then go over the notes. Two o'clock would be much better.

EXAMINER SPENCER: We will take a recess until two o'clock.

(Whereupon, at 12:20 o'clock p. m. a recess was taken until 2:00 o'clock p. m. this day.)

Afternoon Session

(Met, pursuant to the recess, at 2 o'clock p. m.)

EXAMINER SPENCER: Gentlemen, the hearing will now be resumed.

THOMAS R. CRUMLEY

resumed the witness stand and, having been previously sworn, testified on behalf of the Intervener as follows:

Cross Examination (Resumed)

BY MR. McALLISTER:

Q. Mr. Crumley, the Jersey Central Power and Light Company operates in parallel with Public Service Electric and Gas Company, does it not?

A. Yes; it does.

Q. And Jersey Central Power and Light Company also operates in parallel with New Jersey Power and Light Company?

A. Well, I don't know about that. Probably they do part of the time; I don't know.

Q. Are you familiar with the contract between the Jersey Power and Light Company and Jersey Central Power and Light Company bearing date February 6, 1937, which was received in evidence this morning as Intervener's Exhibit No. 4?

A. Yes, sir; I am familiar with it.

Q. Does that contract provide for parallel operation with New Jersey Power and Light Company?

A. If parallel operation is permitted under that contract. We are not operating in parallel at the present time.

Q. In Article III, under "Operation", there is a provision relating to parallel operation, is there not?

A. No, sir. This does not refer to parallel operation. This refers to maintaining inter-connection facilities in accordance with good standard practice.

Q. Will you please read the second paragraph there, Mr. Crumley?

A. Do you mean for me to read it aloud?

Q. Yes.

A. (reading) "In order to avoid interference with the operation of the system of either company both par-

ties hereto agree to confer regarding operation in parallel with a system of any other company. Any excess k. v. a. capacity and service in either system may be utilized in absorbing the wattless current of both systems. The cost of generating and transmitting this wattless current shall be apportioned between the two companies in proportion to the respective benefits obtained."

Q. Of course, those last two sentences refer to another matter, and it is only the first sentence which relates to the question of parallel operation?

A. Yes. I said this contract permits parallel operation.

Q. If one of your emergency connections, the one to which you were referring this morning, at Boonton, is closed would it be necessary for you to operate in parallel with New Jersey Power and Light Company?

A. That could be handled in two ways. We might just use that power for one section of our territory there or we might operate in parallel.

Q. In other words, you must either operate in parallel or disconnect that section which would be served from your main operating system?

A. Yes, sir.

Q. In other words, you could cut off the section by opening switches so that that would operate under the control of the New Jersey Power and Light Company without affecting your other operations?

A. Yes, sir.

Q. But you must do either one or the other?

A. That is right.

Q. As a matter of operation, which method do you follow?

A. We generally follow the method of operating in parallel.

Q. You made reference to what you termed a verbal contract under which certain electric energy was supplied

from your company to Public Service Electric and Gas Company at the Mechanic Street Substation.

A. Yes, sir.

Q. Did I understand you to say that the terms of that verbal understanding were filed with the New Jersey Commission?

A. No; it was not filed with it. We do file with the Utility Commission every month the amount of power that has been transferred between the two companies, and the amount of revenue on same. And the engineers of the Utility Commission are familiar with how this arrangement works out.

Q. But you have not officially advised the New Jersey Commission of the existence of the verbal agreement or so-called verbal agreement?

A. We have advised their Chief Engineer.

Q. What I have in mind is a document going out over the signature of a responsible official of the Jersey Central Power and Light Company addressed to the Secretary of the New Jersey Commission or the Commission itself.

A. No, sir; because there is no written agreement on economy flow energy. It is a day to day arrangement.

Q. But what I had in mind was that the terms of the verbal understanding had not been made known to the New Jersey Commission through the medium of a communication addressed in the manner in which I have indicated.

A. Not in a formal manner; no, sir.

Q. If Public Service Electric and Gas Company has need for electric energy today, let us say, under what you have described as a verbal understanding or agreement they call upon you to furnish a designated amount of electric energy; just how would that information come to your company?

A. The system load dispatcher of Public Service Electric and Gas Company would ask our load dispatcher

or system operator how much available capacity we had operating above our own needs, that is, how much we could supply of it and at what price. Then he figures out what it would cost them to generate the same energy, and if there is a saving by buying it from us then they buy it, provided we can give it to them.

Q. When would that arrangement be made?

A. They usually get into touch with each other every morning, and perhaps sometimes during the day, as their load changes.

Q. In the determination of the price does the load dispatcher for his company bind his company as to what the price will be for that day?

A. Yes.

Q. Or a part of the day?

A. Yes, sir.

Q. If you had need for certain energy tomorrow, let us say, would they arrange for it today?

A. No, sir. They usually arrange for it the day they take it.

Q. From day to day?

A. Yes; from day to day.

Q. You would not expect them to arrange for it today?

A. No, sir; we would not.

Q. What is the high and what is the low price they agree upon, approximately, within your knowledge?

A. The price agreed upon is one-half of the sum of what it costs us to produce that power and what it would cost the Public Service Electric and Gas Company to produce the same power. That is the price at which it is billed. Of course, that varies with the price of coal. We interchange that information between ourselves all of the time. They know exactly what we pay for coal and we know what they pay for coal.

Q. Would you have one price today and another price tomorrow?

A. That happens quite frequently, yes, that the price is different. It is different in different parts of the day also. It varies at different parts of the day, depending upon our load and what units we have in operation.

Q. Take, for instance, 4 o'clock on any particular afternoon; how would the price be figured? I am assuming that you are at that time undertaking to arrange for the delivery of certain energy to Public Service Electric and Gas Company at Mechanic Street.

A. The system operators have built up curves for various conditions of load and for certain units in operation, and they know then from the load and the units in operation what the cost is at the price of coal at that time.

Q. Then by reference to these charts, without detailed computation at the time on their part, they can figure it out?

A. They can figure very closely what it is going to cost; yes, sir.

MR. AUTENRIETH: Will the witness speak a little louder, please. I can not hear him.

THE WITNESS: They can figure very closely what it is going to cost.

BY MR. McALLASTER:

Q. Mr. Crumley, as a matter of fact when they communicate with one another, do they at that time sit down and determine what the price is going to be?

A. They get the approximate price; yes, sir. Then, every few days they get together and check that and determine on the price.

Q. If the charts are uniform under certain conditions they know before they undertake to purchase it about what the cost is going to be?

A. Yes; that is right.

Q. Approximately every day in the year you do supply energy to Public Service Electric and Gas Company at Mechanic Street Substation?

A. We submitted and put into the record here a statement covering that.

MR. PAXSON: Just a moment, please. You mean it was offered by the Federal Power Commission. We did not put in that statement. We have no objection to it except the one objection I raised a little while ago.

THE WITNESS: That is right.

MR. PAXSON: We might as well correct that.

BY MR. McALLISTER:

Q. I put it in. But it is correct, isn't it?

A. Yes, sir.

Q. There is no question about the correctness of it?

A. Yes; it is correct. And it shows almost every day some power interchanged.

Q. And that information was supplied from the same sources that like information is supplied from in the annual reports that you file with the Commission?

A. Yes.

Q. The official records of your company?

A. That is correct.

Q. And all of the information you submit in your annual reports and the reports which you identified this morning is taken from your official records?

A. That is correct.

Q. The same information that you rely upon yourself in the course of your operations?

A. That is true.

Q. If you are studying operating conditions on your line, that would be the source of information which you

would go to, to determine what conditions are with relation to those particular things shown by the reports?

A. That is correct.

Q. Does the verbal arrangement to which you have referred alter or amend the provisions of the written contract which your have with the Public Service Electric and Gas Company for the delivery of energy under the conditions specified in the contract at Mechanic Street Substation?

A. No; it does not interfere with it.

Q. That is a firm and binding contract that is not presumed to be altered by any verbal arrangement?

A. That is correct.

Q. If you know, Mr. Crumley, what rate do you bill the Public Service Electric and Gas Company for the energy which you supply to them at Mechanic Street Substation under the verbal arrangement which you have described? Stated in mills per kilowatt hour, Mr. Crumley, what is the range of that price?

A. Oh, it is somewhere in the neighborhood of three mills.

Q. Would it sometimes be more than three mills? I haven't any particular reference to anything.

A. Yes; it would sometimes be higher and sometimes it would be lower.

Q. It sometimes would be lower?

A. Yes.

Q. Would it ever go up as high as four mills?

A. No; I don't think so.

Q. Would it be less than two mills at any time?

A. No.

Q. It would not be less than two mills?

A. No; it would not.

Q. What is the capacity of the connection which you have, the two circuits which join your South Amboy plant with Mechanic Street Substation?

A. A total of 25,000 k. w.

Q. At times you deliver to Public Service Electric and Gas Company at Mechanic Street Substation approximately the capacity of those lines?

A. Yes. I don't think we often get right up to 25,000, but we have been as high as 21,000 or 22,000, as I recall it.

Q. Sixteen thousand, eighteen thousand, twenty thousand and around in there frequently? Isn't that true?

A. Yes; it goes up there. Ordinarily it is below that point.

Q. The ordinary flow would be in the neighborhood of 10,000, would it?

A. Yes; and sometimes down as low as 5,000.

Q. I think you stated that under this verbal arrangement you also had the right to obtain power, when the requirement arose, from Public Service Electric and Gas Company?

A. Yes, sir. Under the same verbal arrangement, if Public Service Electric and Gas Company could produce power more cheaply than we could, no doubt we would buy power from them. But the power is generally going to Public Service Electric and Gas Company because our costs are lower than their costs.

Q. Mr. Crumley, have there been any times during the year 1937 when you were unable to supply power to Public Service Electric and Gas Company, either this power delivered under the so-called verbal agreement or under the written contract, that is termed "emergency power"?

A. Public Service Electric and Gas Company has not called upon us for any emergency power in 1937, I believe. In regard to economy flow power, there is no obligation whatever on our part to supply that. It is just a question of business. If it pays us to supply it, and if Public Service Electric and Gas Company want it, then

we supply it. If their costs are approximately the same as ours, and if there is nothing to be gained by either company in supplying that power, then we do not supply it.

Q. But you do supply that power practically every day?

A. Yes, very nearly every day there are some few hours during the day when it does pay to supply that power.

Q. And you have furnished it to them at that time, and you do furnish it to them then?

A. Yes, sir.

Q. What are the conditions that make it desirable for them to purchase power at those times?

A. Well, during the time of heavy demand naturally they would have to operate some of their less efficient units to carry their load. We can generate more cheaply than they can generate on their less efficient units, and the logical thing is for them to call upon us to supply that power if we can supply it more cheaply than they can generate it. But they must have the capacity to supply that power themselves. Otherwise it is not economy flow energy and we would not supply it to them if they did not have the capacity to supply themselves.

Q. In determining that capacity the cold standby at Perth Amboy would be taken into consideration?

A. No.

Q. If would not?

A. No; not if it is cold.

Q. As I understand it, it is cold. Is that your understanding?

A. Yes.

Q. Then, that point would not be taken into consideration?

A. No; not if it is cold.

Q. What points would be taken into consideration? I do not mean to name the points, but would you say

equipment or generators of a less efficient character would be taken into consideration in determining whether or not your costs or their costs were the highest?

A. Yes; that is true.

Q. Would it be a generator spinning on the line?

A. Yes.

Q. Or might be a generator that is closed down and not available?

A. It has to be available.

Q. At what times is that peak load—well, not the peak, but the heavy load of Public Service Electric and Gas Company?

A. I couldn't tell you exactly. I am not entirely familiar with Public Service Electric and Gas Company as to its operations, but I would assume it would be from 7 o'clock to 12 o'clock in the morning when their power load is on, and then there is a valley usually from 12 o'clock until 1 o'clock, and then it picks up at 1 o'clock, the heavy peak at this time of the year coming somewhere around 6 o'clock in the evening.

Q. This energy, no matter what you call it—emergency or economy or any other term you might apply to it—is the same electric energy, nevertheless?

A. Well, there is certainly a distinction between firm power and emergency power and economy flow energy.

Q. My question relates to the work that it will do in lighting bulbs or in turning motors, or such things as that. Now, just relating to that, Mr. Crumley.

A. That electricity will do the same work that any other electricity will do.

Q. The electricity in and of itself is the same thing: there is no distinction?

A. Yes; that is right.

Q. Except for billing and determining costs under the conditions under which it may be supplied, which may differentiate what you call it; but the energy in and of

itself is the same thing?

A. Well, it will do the same work, but there is an entirely different purpose as between firm power which the company is obligated to give and this economy flow energy which can be cut off at any time. There is a very marked distinction between those three classes of service.

Q. As classes of service, yes. But just addressing ourselves to the quality of the electric energy that flows, there is no distinction between them?

A. No; not in the quality of the electric energy itself; there is no distinction.

Q. Under this verbal understanding or agreement which you say provides for the delivery of the power or the energy, if you deliver 10,000 kilowatts at a particular time under that arrangement, it would do exactly the same amount of work as if it were delivered under the written contract or emergency provision?

A. That is correct.

Q. It comes from the same generator, or it could come from the same generator?

A. That is correct.

Q. And simultaneously, if the occasion arose, you might deliver energy from that generator to Public Service Electric and Gas Company, over the same lines at the same time, and you would bill part as economy flow and part as emergency?

A. I don't recall that that particular condition has ever existed. I can conceive that that might be done.

Q. It might very readily occur? I don't say that it has, but it could very readily occur if they had a breakdown in one respect and a need in the other and you were able to satisfy both demands, and then the energy would come from the same generator and go over the same two lines but the billing would be split?

A. Yes. That could be done.

Q. If you arrange and agree to furnish a certain quantity of energy at a particular time during the day, to the extent that you agree to supply that during that time it is dependable?

A. Yes, for the three or four hours that we agree to give it I would say that it is dependable. But if anything happened that our load increased where we could not give it, we would probably say that we could not give it; and they must have the capacity to supply it themselves, so we would tell them we could not supply it. I don't think it is a firm contract that we make for three or fours hours in advance.

Q. I mean reasonably dependent upon the amount you can supply in handling your load and which you might really count on.

A. Yes. I would say, if you always keep this one thought in mind, that they must have this capacity themselves and be able to supply that energy themselves.

Q. Mr. Crumley, when did this verbal arrangement or agreement come into being?

A. Between ourselves and Public Service?

MR. PAXSON: I did not hear the question. May I have it read?

EXAMINER SPENCER: Will the reporter read the question, please?

(The last question was then read by the reporter.)

BY MR. McALLISTER:

Q. What is your answer, Mr. Crumley?

A. It was about the time our South Amboy plant was put into commission.

Q. And that plant was put into commission back in 1931, was it, or was it in 1930?

A. It was toward the last of 1930. We were testing out the plant but did not go into full operation until 1931.

Q. Did you make that verbal agreement for and on

behalf of the Jersey Central Light and Power Company?

A. I approved it; yes, sir. The plan was worked out between the engineers of Jersey Central Power and Light Company and the engineers of Public Service Electric and Gas Company, and I approved it so far as Jersey Central Power and Light Company was concerned.

Q. Whom did you advise of the Public Service Electric and Gas Company that it was agreeable to you, or was that the means or manner followed in approving it?

A. I believe the man in Public Service Electric and Gas Company who approved it was a man named Penn, who was in charge of their production department.

Q. Are you referring to the Mr. Penn who is there now as general manager?

A. Yes, sir. At that time he was in charge of production.

Q. Your understanding was made with him? I mean your approval was related to him?

A. Yes, sir.

Q. And did he approve it on behalf of Public Service Electric and Gas Company?

A. Yes, sir; that is right.

Q. That is, so far as you were concerned?

A. Yes, sir.

Q. During the course of the hearing, Mr. Crumley, it was suggested here that where two operating systems are interconnected and there is a surge of power from one company to the other that the company which receives that surge of power can then push it back. In answer to a question this morning you stated that the surge of energy coming upon a line must necessarily be consumed on that line. Isn't that true?

A. Yes.

Q. Now, if you push back any energy to balance the surge which you have used, that must be energy which you generate or which has come to you from one of

your inter-connections? Isn't that true?

A. As a matter of practical fact, if we got the surge, that is, if Jersey Central Power and Light Company got a surge on our line from Public Service Electric and Gas Company, we would not attempt to create a surge back onto their lines.

Q. But if you did or if you delivered back an equal amount to counterbalance the amount that you had received in that manner it would be energy which you had generated or which you had received from some of your inter-connections?

A. Yes; I suppose so.

Q. It could not come from anywhere else, could it?

A. No. I think you are probably referring to my testimony in regard to this incidental flow of energy, are you not?

Q. That is right. It has relation to that. But I mean to say what comes over on to your line you use and what goes back on to their line they use?

A. That is right.

Q. To that extent it is a condition which can not be avoided but, nevertheless, it is energy that flows and has a utility on the lines which receive it?

A. That is true.

Q. And it goes out to light bulbs and turns motors and furnishes power and light and heat, the same as any other energy that you have on the line?

A. That is correct.

Q. Mr. Crumley, under the verbal contract that exists to which you referred, at all times when they have capacity to operate sufficient generating units and they call upon you to supply so-called economy flow energy from your South Amboy plant, you have the capacity which will enable you to supply it to them, to supply to them their requirements to the extent of the capacity that they have idling on the line?

A. I don't quite understand your question. Will you repeat it, please? I don't understand when you say "they."

Q. When I referred to "they" I referred to Public Service Electric and Gas Company. But let me put it in this way. If Public Service Electric and Gas Company has idling on the lines, their less efficient generators, to the extent of that capacity that is idling on Public Service Electric and Gas Company lines if they simultaneously call upon you, that is, the Jersey Central Power and Light Company, for that quantity of electric energy, you have the available capacity to supply it to them at all times, have you not?

A. Oh, no; not always, no. If we had turbines which are capable of producing 80,000 k. w. and the hour peak were 70,000, we would have 10,000 k. w. that would be available if the Public Service Electric and Gas Company wanted it and would pay us a little profit on it.

Q. That condition exists on your line at all times, doesn't it; that is, your generating capacity is always in excess of your requirements? Isn't that true?

A. No; I don't believe that is true. I do not believe that the turbines runnings would always be in excess of our demand, that is, sufficiently in excess to supply them any appreciable amount of energy.

Q. Day in and day out you do that?

A. Ordinarily.

Q. Then, ordinarily that is the condition under which you have operated through the year 1937 and in the year 1938 up to date?

A. Yes, sir.

Q. You referred to the fact the Jersey Central Power and Light Company and Public Service Electric and Power Company split the savings. If that is accomplished by adding together the cost of the two and splitting the energy at half, that automatically splits the savings, doesn't it?

A. That is right.

Q. There is no other manipulation of the price?

A. The theory is that each company should get half of the savings by generating that energy on the most efficient unit.

Q. Do you exchange data as to your loads and generators that are available and operating? I mean, do you interchange operating data so that they can determine approximately what will be available in forecasting their demands?

A. We do.

Q. I mean in forecasting their requirements.

A. We do.

Q. So that they can determine what will be a reasonable amount to take from you?

A. This whole arrangement is based upon mutual confidence in the operators of the two companies. We lay all of our cards on the table. We give Public Service Electric and Gas Company all of our costs, the price we are paying for coal and the efficiencies of our units, and if conditions are not normal we tell them, and we know then that we can not supply this power at the same rate, that it must be at a higher rate.

Q. And possibly more loads on your line at different hours?

A. Yes. We exchange all of that information very openly.

Q. And you know what their probable loads will be at various times?

A. Yes.

Q. Laying those down side by side or one upon the other, Mr. Crumley, you know almost as much about the requests received from them for this flow of power as if you were there on the other end making the request?

A. Well, I don't know that. We don't know all of the details about their load. We know what their costs

for the generating is for the different units, and they know the same thing with regard to our units. We do not know what their demand is on their entire system, or anything like that.

Q. But so far as your probable load in the area of South Amboy, you know what your probable surplus will be, and they can get that?

A. They telephone us and ask us how much available capacity we have.

Q. They might telephone to you in the morning and ask you how much you would expect to have?

A. Yes.

Q. And that will not vary a great deal from day to day?

A. No, sir; not a great deal. If it does and if any unusual conditions come up, the dispatchers get into touch with each other and iron it out.

Q. In your testimony this morning, Mr. Crumley, you made the statement—although I am merely paraphrasing it as I have not copied it down—that in arriving at your understanding or arrangement or contract with Public Service Electric and Gas Company no consideration was given to the arrangement between Public Service Electric and Gas Company and Staten Island Edison Corporation?

A. Yes, sir.

Q. By that you mean so far as you are concerned?

A. So far as my company is concerned.

Q. That is true so far as your own company is concerned?

A. Yes, sir.

Q. I believe you stated this morning, Mr. Crumley, that the net profit on this so-called economy flow energy sold to Public Service Electric and Gas Company in the year 1937 amounted to $10,000?

A. Somewhere in the neighborhood of $10,000.

Q. It was somewhere in that neighborhood?

A. Yes.

Q. Do you know what the gross receipts from that sale were?

A. I don't recall from memory. I don't know whether or not I have that here.

Q. I was induced to raise the question because you compared your net on those sales with the gross on other business, and I thought we should compare like with like.

A. The gross is $145,789.

Q. That was the amount which you received from Public Service Electric and Gas Company?

A. Yes, sir.

Q. Can you tell me what quantity of energy was sold for which that amount of money was paid?

A. That was 55,421,000 kilowatt hours.

Q. That is a relatively important item of revenue when you consider that it was derived outside of your own area, isn't it?

A. Any business today is important.

EXAMINER SPENCER: Have you any other questions, Mr. McAllister?

MR. McALLISTER: I have no further questions.

EXAMINER SPENCER: Mr. Paxson, have you any questions?

MR. PAXSON: No, Mr. Examiner.

MR. AUTENRIETH: May we take a recess for a few minutes before redirect examination?

EXAMINER SPENCER: Yes. At this time, Gentlemen, we will recess for five minutes.

(Thereupon a short recess was taken, after which the following occurred:)

EXAMINER SPENCER: Gentlemen, the hearing will now be resumed.

Redirect Examination

BY MR. AUTENRIETH:

Q. Mr. Crumley, will you look at this Intervener's Exhibit No. 1, please, which is a map of the Jersey Central Power and Light Company system, and spot Comical Corners down in the neighborhood of New Lisbon and Wrightstown?

A. It is right here (indicating on map).

Q. And will you please mark it?

A. This (indicating) is Comical Corners right here, and I am indicating it by marking it with a blue pencil. That point (indicating) is where the lines divide, one going down to New Lisbon and the other up to Wrightstown.

Q. Now, Mr. Crumley, your attention was called to the contract between Jersey Central Power and Light Company and New Jersey Power and Light Company, a contract which existed prior to the one dated February 6, 1937, and to the payment of $1,000 a month under that contract to New Jersey Power and Light Company. Was there any reason why conditions changed so that that payment was eliminated by the change in that contract?

A. Yes, sir.

Q. What was it?

A. The load of New Jersey Power and Light Company had grown quite rapidly and the line from West Newton over to Boonton, where they connect—

Q. Do you mean West Wharton instead of West Newton?

A. I mean West Wharton to Boonton. The line from West Wharton to Boonton had become overloaded and they were unable to supply the amount of emergency power

that they had agreed to supply when that original contract was made; also they were getting into a position where they saw in the future they were going to need their power, and this contract was entered into upon the basis that neither company would pay a minimum charge to the other until facilities were built by New Jersey Power and Light Company to take firm power from us.

Q. Those facilities being referred to in the contract of February, 1937?

A. That is right.

Q. And at that time you were not getting value received out of your thousand dollars through a supply from New Jersey Power and Light Company?

A. We did not think so.

Q. So it was abandoned?

A. That is correct.

Q. Would you consider that incidental energy or slop-over under economy flow was in any sense a surge of electricity from one company to the other?

A. No, sir. I would not call it a surge, because usually it is a comparatively small amount of power.

Q. How do you define firm power?

A. I assume you are referring to the firm power contract or to a firm power contract between two utility companies?

Q. Yes.

A. Firm power is where one company contracts to supply a certain amount of power at all times to the other company. The contract usually extends over a definite period of time.

Q. And with a constant obligation to serve it?

A. Yes.

Q. With respect to your economy flow contract with Public Service Electric and Gas Company, under conditions where an emergency or an unforeseen load arose on Jersey Central system during a time when Jersey Central

Power and Light Company was delivering economy flow to Public Service Electric and Gas Company and this emergency curtailed the generation of Jersey Central Power and Light Company, would there be any hesitancy in immediately curtailing any part of or entirely the economy flow being delivered to Public Service Electric and Gas Company?

A. I would say—

MR. McALLISTER: May I hear the question read before it is answered?

EXAMINER SPENCER: Will the reporter read the question, please.

(The question was then read by the reporter.)

BY MR. AUTENRIETH:

Q. What is your answer?

A. No; there would be no hesitancy at all. Our dispatcher would immediately notify Public Service Electric and Gas Company that we could not supply this energy. He would probably tell him what the trouble was.

Q. Under your verbal agreement you had that right?

A. Oh, yes, of course.

Q. As between Public Service Electric and Gas Company and Jersey Central Power and Light Company is there any corporate affiliation now or has there ever been?

A. There has never been and there is not today.

Q. Did Public Service Electric and Gas Company ever own any of the securities of Jersey Central Power and Light Company?

A. They never have.

Q. Has Jersey Central Power and Light Company ever owned any of the securities of Public Service Electric and Gas Company?

A. It never has.

Q. Dealings with them have been at arm's length?

A. That is true.

Q. With respect to New Jersey Power and Light Company prior to March 14, 1938, did Jersey Central Power and Light Company ever own any securities of New Jersey Power and Light Company?

A. No.

Q. Did New Jersey Power and Light Company own any securities of Jersey Central Power and Light Company?

A. No, sir.

Q. Since March 14th the acquisition of the 32 per cent of common stock involved in this discussion was made by New Jersey Power and Light Company?

A. That is correct.

Q. And all of your dealings prior to the date mentioned with the New Jersey Power and Light Company were likewise at arm's length between them?

A. That is true.

Q. Some reference was made to the times when Jersey Central Power and Light Company took energy from New Jersey Power and Light Company at Boonton during periods when repairs were being made on your lines between Whippany and other nearby places. Was it possible to have made those repairs without cutting off the line?

A. Sometimes it would have been. We have two 3-phase lines on one set of wood poles. We could work those lines hot, but it is an expensive proposition to do that, and also it is rather dangerous. So rather than make the repairs while the lines are in service we buy power and connect with New Jersey Power and Light Company and disconnect our lines so that we can work on them.

Q. Those were the emergencies to which you referred in your previous testimony?

A. Yes, sir.

MR. AUTENRIETH: That is all.

EXAMINER SPENCER: Have you any questions, Mr. Paxson?

MR. PAXSON: We have no further questions of this witness, Mr. Examiner.

MR. McALLISTER: Mr. Examiner, I have a few questions in connection with matters that have arisen.

EXAMINER SPENCER: You may proceed, Mr. McAllister, with your examination.

Recross Examination

BY MR. McALLISTER:

Q. Mr. Crumley, a definite contract to supply a particular amount of energy for a definite period, let us say five minutes, might be firm power?

A. I never heard of a contract made on that basis.

Q. If it were made on that basis where you undertook to furnish a definite amount for a definite period of time and that time were five minutes but where it was financially advantageous to you or satisfactory to you, that would be a firm power contract, would it not?

A. That is a hypothetical case, I suppose. I never made a contract of this nature for less than five years in my life, I don't believe.

Q. Then, thirty days would not be firm power, under your definition. Suppose you took a generator out of line and it was the only available capacity and for the time it was out you agreed to supply a definite amount of energy for the requirements: that would be firm power you would be supplying under those conditions?

A. I would say it would be emergency power. You would not take the turbine out unless you had some trouble with it.

Q. Suppose I had made a prearrangement or pre-

arranged agreement with you for you to supply it; for instance, I want to rebuild it; it isn't anything that happens in emergency but I want to improve its operating conditions, renew parts of it, and so on, and I prearrange the whole matter and enter into a contract with you whereby you are to supply me during that time?

A. Oh, yes; that could be done.

Q. And that would be firm power?

A. It would be.

Q. As a matter of fact, it is pretty much a matter of agreement between the parties as to what you call it under certain circumstances? Isn't that true?

A. I suppose that is true. It all depends upon how the contract is worded.

Q. Mr. Crumley, how do you account for the fact that you have a definite, written contract for emergency service between your South Amboy plant and Mechanic Street substation, but with respect to this economy flow it is only a verbal arrangement, and you say that during the year 1937 you delivered 59,000,000 k. w. h. of energy under that verbal agreement and, as I understood your testimony, you delivered no energy under the written agreement?

A. When we entered into that contract with Public Service Electric and Gas Company or, rather, prior to entering into that contract Jersey Central Power and Light Company had been buying firm power from Public Service Electric and Gas Company, so most of the facilities were available, and it was common sense to make use of those facilities, so we entered into an emergency power contract so that we could supply energy to Public Service Electric and Gas Company if they were in trouble or they could supply energy to us if we were in trouble.

The economy flow energy arrangement developed as we went along. At the time we made the contract I don't think we had given very much consideration to the economy flow feature.

Q. If at any time Public Service Electric and Gas Company had imperative demands because of requirements on their line which developed an unusual load or what not, under that emergency contract they could call upon you for emergency energy and they would then be obligated to pay at the price specified in that contract?

A. That is correct.

Q. And they have the right to depend upon that under the conditions specified in the agreement?

A. That is right.

Q. Mr. Crumley, prior to the acquisition of the stocks of the Jersey Central Power and Light Company by New Jersey Power and Light Company on March 14, 1938—I am referring to the 345,350 shares—who held that stock prior to the acquisition by New Jersey Power and Light Company?

A. It was an affiliate of the Associated Gas and Electric—NYPANJ.

Q. Now, Mr. Crumley, that is a holding company that also owns the capital stock of the New Jersey Power and Light Company, isn't it?

A. I really don't know, to tell you the truth.

MR. McALLISTER: That is all.

BY MR. AUTENRIETH:

Q. There was no transfer on the books of Jersey Central Power and Light Company to NYPANJ? There was no transfer on the books of Jersey Central to NYPANJ of this stock, was there?

A. No, sir.

MR. McALLISTER: Is that a question?

MR. AUTENRIETH: Yes. I asked if there was. There was no transfer on our books. The only transfer was the transfer to New Jersey Power and Light Company.

BY MR. AUTENRIETH:

Q. You said stock owned by NYPANJ. We never transferred it on our books?

BY MR. McALLISTER:

Q. It was owned by them before though. It was not actually transferred on the books? Isn't that true?

A. My understanding is that it was. It was not transferred on the books.

BY MR. AUTENRIETH:

Q. You had no personal information on the subject, or have you?

A. No, sir. It was really hearsay.

BY MR. McALLISTER:

Q. It is a little more than hearsay, isn't it, Mr. Crumley? The application filed with the Securities and Exchange Commission declares that fact, does it not, if you have seen that?

A. I never read that.

MR. McALLISTER: That is all.

EXAMINER SPENCER: Have you any other questions?

MR. AUTENRIETH: I have no more questions.

MR. PAXSON: We have no other questions.

EXAMINER SPENCER: Then the witness may be excused at this time.

(Witness excused.)

MR. PAXSON: If the Commission please, it is now about 3:45 o'clock. Already we have had four pretty hard days here. This is Friday. Judge Autenrieth and I have a law practice, and all of us have families that we would like to return to. So I suggest that we adjourn at this time until Monday morning.

at such hour as the Commission sees fit to fix. If we were to continue on until twelve o'clock tonight we could not possibly finish with our case, even if there were no cross examination of the witnesses. I have been down here before the Commission many times, and it has always been the custom for the Commission to grant some concession to out-of-town attorneys.

EXAMINER SPENCER: What have you to say, Mr. McAllister?

MR. McALLISTER: Mr. Examiner, I am just as anxious as anybody else to conclude this case. I am perfectly willing to adjourn over Saturday; but I see no occasion for adjourning now. Yesterday we adjourned at 3:50 o'clock, and it is now 3:45. I can readily conceive that we could utilize some of this time. We have an hour that we can easily utilize and make some progress. As a matter of fact, we have put in but an hour this afternoon. I was a little late myself, and perhaps it was my fault. I say an hour; but it may have been an hour and a half.

MR. PAXSON: If the Commission please, none of us can get home tonight, if we do that. I live outside of New York City, and I have to get home. And I have to attend to some personal affairs.

I might add one other reason that, as a matter of fact, is compelling to this Commission. I also represent, as I said before, the Kentucky and Tennessee Light and Power Company which has a contract to dispose of a distribution system in Clarksville, Tennessee. There is a time limit on it. I have had conferences with the Acting General Counsel of the Federal Power Commission. They requested us to have this petition in promptly and I must go back so as to get it in here Monday or Tuesday. And really I must have a

little rest. I am very tired. That involves a great public interest. There is an absolute time limit on it, or the contract will expire. The T. V. A. is back of this. The public interest is of greater importance than the use of an hour this evening to continue the hearing in this case.

First I put it upon the consideration of courtesy; but if Mr. McAllister does not agree to that I will offer a compelling reason.

EXAMINER SPENCER: If we are to adjourn over the week-end in order to permit counsel from out of town to arrive home at a reasonable hour tonight, I think we should adjourn at this time until ten o'clock Monday, October 3rd.

(Whereupon, at 3:50 o'clock p. m., September 30, 1938, an adjournment was taken until Monday, October 3, 1938, at 10:00 o'clock a. m.)

Washington, D. C.,
Monday, October 3, 1938.

The hearing in the above-entitled matter was resumed, pursuant to adjournment, in Room 1201, Hurley-Wright Building, 1800 Pennsylvania Avenue, N. W., Washington, D. C., at 10:00 o'clock a. m.

Before:

Carroll B. Spencer, Trial Examiner.

Appearances:

As heretofore noted.

PROCEEDINGS

EXAMINER SPENCER: The hearing will be resumed. You may proceed, Mr. Paxson. Call your witness.

Whereupon

J. H. LYTLE,

a witness produced by and on behalf of the respondent, having been first duly sworn by the Examiner, was examined and testified as follows:

Direct Examination.

BY MR. PAXSON:

Q. Mr. Lytle, where do you reside?

A. 55 Valencia Street, Staten Island, New York.

Q. By whom are you employed, Mr. Lytle?

A. Staten Island Edison Corporation.

Q. In what capacity?

A. Consulting engineer and in charge of operations.

Q. Do you mean you have anything to do with the dispatch of the loads?

A. That comes under my jurisdiction.

Q. You are consulting engineer in actual charge of operations?

A. Yes, sir.

Q. Consulting engineer for Staten Island Edison Company in charge of actual operations?

A. Yes, sir.

Q. Are you a graduate engineer, Mr. Lytle?

A. Yes, I graduated from Villanova College in 1916. I received a degree of Bachelor of Science in Electrical Engineering.

Q. You are a licensed professional engineer for the state of New York, are you not?

A. Yes.

Q. Tell us a little bit about your experience.

A. Well, the first two years after I graduated from college I worked as electrician and draftsman for a coal company. At that time they were installing quite a lot of new equipment and changing the system from D. C. to

A. C. I had a good bit of work in connection with that, largely drafting work.

The next five years, from 1912 to 1917 I was employed by a public utility in central Pennsylvania, the Penn Public Service Company, as engineer. I had charge of all the engineering of that company. It was a relatively small company, but I had charge of all the engineering. That work I did, or the work that was done under my direction consisted of laying both transmission and distribution lines, installing additions to power stations, at two or three power stations, and of general engineering work that usually is done by a public utility company in a development stage. The company was growing very fast at that time.

That brings up to 1917. I went into the service late in 1917 as a reserve officer in the Navy, with the rank of Lieutenant, junior grade. After about six weeks training at the Naval Academy I was assigned to the Battleship Arizona as Electrical Officer. There I had charge of the Electrical Division. The Electrical Division took care of all of the electrical equipment of the ship except radio. That came under a separate division. There was about 50 or 60 men in the Division and we had charge of all motors, all fire control instruments, all electrical equipment except radio equipment.

After I left there I returned to Pennsylvania as assistant to the consulting engineer of Penn Public Service Corporation. That was a corporation formed by combining the property I had been with with another property. I had direct charge of all of the engineering for that company. The work consisted largely of, or the principal things were substation lay out and design, transmission line lay out and design, power station additions and lay-outs and so forth. I was there from 1919 until late in 1926 when I was transferred to the office of the J. G. White Management Corporation of New York City as as-

sistant to the Vice President in charge of Pennsylvania Electric Company, as I remember the name of the company.

In that work, the man under whom I worked was in charge of operations and construction and I worked as assistant on all phases of its problems. After about a year there I was transferred to Staten Island Edison Corporation and given the title of Consulting Engineer and later put in charge of operations of the system.

Q. All right, Mr. Lytle, tell us something about Staten Island Edison Company, what territory it serves, its generating stations and capacity, just generally.

A. Staten Island is a borough of Richmond. It is a part of New York City. The population is about 180,000 people. That is a rough figure. The area is about 57 square miles. Staten Island Edison Corporation is the only public utility giving electrical service on Staten Island. The load it serves consists of residential, commercial and power. Most of the industries on Staten Island are served by, their electric power is served by Staten Island Edison Corporation.

Q. Tell us about its generating stations, where they are.

A. There is one generating station at Livingston. I may add that Livingston is a locality, a local term. It has no corporate existence. It is located on the north shore of Kill van Kull. Kill van Kull is a body of water that separates Staten Island from Bayonne, New Jersey. The power is all generated there and distributed all over, all parts of Staten Island.

Q. Staten Island is a distribution company then, isn't it?

A. Yes, sir.

Q What is the capacity of this generating station at Livingston?

A. The rated capacity is 47,500 kilowatts.

Q. That is the rated capacity?

A. The name-plate rating.

Q. How much did you say?

A. 47,500 kilowatts.

Q. Are you familiar with the contract under which certain power passes between Staten Island Edison Company and Public Service Electric and Gas Company?

A. I am.

Q. I show you this contract and ask you if that is the contract under which the Staten Island Edison Company operates over this interconnection which has been testified to between the Public Service Electric and Gas Company and the Staten Island Edison Company?

A. It is.

MR. PAXSON: I ask that this be marked for identification. This is a letter contract dated January 29, 1936, between Public Service Electric and Gas Company and Staten Island Edison Corporation.

I offer this as an exhibit.

EXAMINER SPENCER: Any objection?

MR. McALLISTER: No objection.

EXAMINER SPENCER: Let it be received in evidence as Respondent's Exhibit No. 1.

(The document referred to was marked Respondent's Exhibit No. 1 and received in evidence.)

BY MR. PAXSON:

Q. Now, Mr. Lytle, tell us what is the physical set-up of this interconnection between Staten Island and Public Service Electric and Gas? Just describe it generally for us. Tell us what it consists of.

A. It consists of two 350,000 circular mill cables, connecting Mechanic Street Substation of the Public Service

Electric and Gas Company, located in Perth Amboy, New Jersey, and the Atlantic Substation of the Staten Island Edison Corporation, located in Staten Island. There are also two banks of transformers that change the voltage from 26.4 KV to 33,000 KV.

As I understand it, each company built and paid for that part of the interconnection running from the substation to the shore of Arthur Kill. The Arthur Kill is a strip of water separating Perth Amboy from Staten Island. At that point Staten Island Edison Corporation paid for the equipment that runs from Atlantic Substation to the shore line of the Arthur Kill on the Staten Island side. The submarine cable under the water, each company paid for half of that, so that each company owns up to the state line, the boundary line between New Jersey and New York running along the middle of this Arthur Kill, each company paid for cable up to that point, or about half of the total submarine cable.

Q. Where are the meters?

A. There are meters on both sides.

Q. There are meters on both sides?

A. Yes, meters at Atlantic Substation and Mechanic Street and circuit breakers at Staten Island and Mechanic Street and other switches, other disconnecting switches and so on.

Q. You were giving capacity and I think you said in one case it was 33,000 KV, but you really meant 33 KV?

A. Yes. I wish you would correct that. It is 33 KV, 33,000 volts.

Q. Are there switches located at both of these substations controlling the flow?

A. Yes, there are switches located at both substations so that opening the switch will render the interconnection open. It can be done in either substation.

Q. What is the normal position of these switches, open or closed?

A. The normal position is closed at both ends.

Q. You said you were in charge of operations of Staten Island Edison Company. Suppose you explain in your own way just how you operate this, how you have operated it between the periods August 26, 1933 and March 14, 1938? How has it been operated?

A. It has been operated primarily for emergency service, as it has been operated primarily to supply Staten Island in case of breakdown of facilities. In case of a breakdown of our facilities we are under obligation to notify the Public Service Electric and Gas Company load dispatchers that we are taking emergency power. When our facilities are back to normal we notify them that the emergency period has ended. That is the principal use of the interconnection, the principal reason for it.

Q. What is the yearly amount of energy passing over the years intervening between the two dates I have given you? What would you say would be the normal use for every emergency purpose from the standpoint of time?

A. In that period of time I would say about ten cases of emergency. Now some emergencies only lasted a minute and some two minutes, just about the time required for switching. One or two lasted longer. I think one in that period lasted about four hours. That is a rough idea of how it has been operated. I don't believe in that period there was any time when we took our entire supply from them.

Q. Mr. Lytle, have you prepared any statements which show just how often this interconnection was used for emergency purposes between August 26, 1935 and March 14, 1938?

A. Yes, I have. Shall I read them?

Q. You have there a memorandum entitled Purchases of Emergency Energy, Staten Island Edison Company Corporation for various periods of time, one for August 26, 1935 to December 31, 1935, is that correct?

MR. McALLISTER: Mr. Examiner, I think the witness ought to be permitted to state what he has.

MR. PAXSON: I am just trying to expedite it.

EXAMINER SPENCER: He is just trying to expedite it.

BY MR. PAXSON:

Q. Will you tell me what the statement is?

A. I will. It is

MR. McALLISTER: (interposing) If he is going to read them

MR. PAXSON: (interposing) I will do it any way you like.

BY MR. PAXSON:

Q. Will you tell us what you have there?

A. I have a statement here, the title is Purchases of Emergency Energy August 26, 1935 to December 31, 1935, another sheet for 1936

Q. (interposing) That is purchase of emergency energy?

A. The title is the same. The last one is purchase of emergency energy January 1, 1938 to March 14, 1938.

Q. You have one for the year 1937, do you or not?

A. I think I mentioned it. I have one—suppose I give those over. The title of all these sheets is Purchases of Emergency Energy, one sheet August 26, 1935 to December 31, 1935, the next sheet is all of 1936, the next sheet is all of 1937, and the next sheet is from January 1, 1938 to March 14, 1938.

Q. Where did the information contained on these sheets come from?

A. From the company records. It comes from the system operators and from the Public Service Electric and Gas Company. It comes from the system operators.

comes from the men under me and from the Public Service Electric and Gas Company. We have to check with them.

Q. Well, Mr. Lytle, tell us how many purchases of emergency energy were made by Staten Island Edison Corporation, let us work backwards from January 1, 1938 to March 14, 1938.

A. From January 1, 1938 to March 14, 1938 there was one emergency period on January 25th, beginning at 1:00 a. m. and lasting until 3:35 a. m. The energy received was 1,000 kilowatt hours.

Q. That is all for 1938 between those periods?

A. Yes, sir.

Q. How many purchases of emergency energy were there for the year 1937?

A. There were three periods. I will read them, February 22nd, 1:44 a. m. to 5:50 a. m., 3,400 kilowatts; June 3rd, 2:38 p. m. to 2:39 p. m., no kilowatt hours. Now that means, while there was an emergency or declaration of emergency, the amount taken was so small the Public Service meters didn't show it. It was probably considerably less than a dollar in value under the contract.

Q. This emergency took one minute of time?

A. From 2:38 p. m. to 2:39 p. m., one minute.

Q. When was the next one?

A. August 21st, 7:06 a. m. to 7:08 a. m., two minutes, no kilowatt hours recorded.

Q. Then the purchases of Staten Island emergency energy from Public Service Electric and Gas for the year 1937 were in the aggregate how much?

A. 3,400 kilowatt hours for the year 1937.

Q. There were two other declared emergency periods of one minute?

A. That is right, one was one minute and one was two minutes.

Q. That is right, but the amount taken was not appreciable, not recorded?

A. They could not find it on their meters. When we take emergency we go by their meters.

Q. All right, Mr. Lytle, how about the year 1936? What were the purchases of emergency energy of Staten Island Edison Corporation?

A. I will give them in order. February 25, 1936, 6:44 a. m. to 6:46 a. m., no kilowatt hours registered.

Q. That was just the same?

A. It was a very short emergency at a period of light load. It was so very little they could not find it.

June 18th, 3:35 p. m. to 7:39½ p. m., 383 kilowatt hours; August 12th, 9:37 a. m. to 9:38 a. m., 75 kilowatt hours.

Q. That lasted a minute, but you were able to get something?

A. Public Service was able to get something.

Q. That was 75 kilowatt hours?

A. That is right. August 13th, 2:25 a. m. to 2:47 a. m., 3,213 kilowatt hours, and on August 13th, the same date, 3:07 a. m. to 3:11 a. m., that is included in this 3,213 kilowatt hours. The trouble extended from 2:25 a. m. until 3:11 a. m. There were two emergency periods in there with a period between them during which we carried our own load. There was some trouble on the system. The total of 3,213 is the total for both those periods on August 13th.

The last one is December 11th, the last one in 1936, 8:29 a. m. to 8:30 a. m., 54 kilowatt hours.

Q. That is all purchases of emergency energy made by Staten Island from Public Service in 1936?

A. That is right.

Q. What is the aggregate kilowatt hours?

A. For 1936?

Q. Yes.

A. I will add it up.

Q. Just add it up.

A. I get 3,725 for the year 1936.

Q. Now how about for the period between August 26, 1935 and December 31, 1935? Did Staten Island Edison Corporation purchase any emergency energy from Public Service Electric and Gas?

A. August 26, 1935 to December 31, 1935? is that the period?

Q. Yes.

A. They purchased it once, November 3rd, 6:49 a. m. to 6:50 a. m., and no kilowatt hours registered.

Q. There was a slight technical emergency for apparently a minute of time but nothing purchased?

A. That is right, no kilowatt hour charges were made, but we paid a demand charge.

Q. You paid for no energy under this contract that has been offered in evidence?

A. That is right.

MR. PAXSON: If the Commission please, while Mr. Lytle has testified to all these facts, I would be glad to offer this statement as an exhibit for the convenience of Commission and counsel, if they desire a copy.

EXAMINER SPENCER: Let the statement be admitted as Respondent's Exhibit No. 2.

(The document referred to was marked Respondent's Exhibit No. 2 and received in evidence.)

MR. McALLISTER: I have no objection so far as the exhibit goes, but I ask that the respondent furnish also for the period subsequent to March 14, 1938 a statement showing the emergencies that have arisen down to date so that the record will show what has transpired not only before the date of March 14,

1938, which Mr. Paxson holds to, but subsequent to that date, indicating the continuation of the arrangement.

There is no question about the contract remaining in force and effect, I don't think, but what has transpired under the contract subsequent to that date also has some bearing upon the issue here as indicating that the same conditions have prevailed subsequent as did prevail prior to that time.

MR. PAXSON: If the Commission please, no transactions which occurred subsequent to March 14, 1938 are any part of our case. As the Commission realizes, I have endeavored to consistently object to anything being introduced by the other side which has to do with transactions subsequent to that date. I might say this, we have no objection to giving the information to counsel for the Commission if he desires it. I will certainly not be inconsistent and offer it myself.

MR. McALLISTER: I ask that information be supplied by the respondent for the record in this case. I make that request formally at this time. It is peculiarly within the knowledge of the respondent. They have it, and they can file it very readily with the Examiner for the record in this case, and I think it is only reasonable that it be done in order that the record be complete in that respect.

MR. PAXSON: Off the record.

EXAMINER SPENCER: Off the record.

(Discussion off the record.)

EXAMINER SPENCER: The situation is simply this. At this time I am not ruling on the question until after this cross examination. You may proceed.

BY MR. PAXSON:

Q. Now, Mr. Lytle, you also have some economy flow operations over this line, don't you?

A. Yes, sir.

Q. Tell us about them.

A. Well, we take what we call economy flow power when we think we can make a little saving in operating expenses. However, it is very highly restricted, the whole arrangement. To begin with we always have to have in operation capacity enough to carry our own load, whether we are taking some economy flow power from Public Service or not.

The way we handle it is this. Say today we estimate that our load will be a certain value tomorrow. Now it may be that we feel we ought to run two machines tomorrow or three machines or an additional machine more than we would run if we could get a little power elsewhere, so we get in touch with the generating department of Public Service. When I say Public Service I am referring to Public Service Electric and Gas. We get in touch with them and ask them what their increment cost of generating an additional 1,000 or 2,000 kilowatts would be. We have charts and curves, cost data, test data and so forth; so that we can predict quite accurately what it will cost us to make an amount that we might wish to buy. It is usually a fairly small amount, a fairly small portion of our total.

If the cost that Public Service quotes us is less than what it would cost us, we split the difference and buy some at that average cost.

Does that make it entirely clear?

Q. In figuring this cost it is based exclusively and solely on the cost of running the Public Service Company's generators?

A. Oh, yes. It is our understanding we have the increment cost will be based on their generating cost.

What it costs them, not the average generating cost, not the average for the whole plant, but it works out, it is the cost of their least efficient generator. Naturally their more efficient units carry the base load. As the load comes up, as they put on machines, they are always less efficient, so this increment rate they quote us is the increment rate of the last generator they put on, which is the least efficient.

Q. And that cost is based on that particular generator only and not average cost?

A. Yes, sir.

Q. Did you take any economy energy from Public Service Electric and Gas Company in the time between the period January 1, 1938 and March 14, 1938?

A. We took very little during that period.

Q. Did you take any?

A. We took a little; yes, sir.

Q. Have you got a statement of purchases of economy energy by Staten Island Edison Corporation from Public Service and Electric and Gas?

A. I think I have.

MR. McALLISTER: Off the record.

(Discussion off the record.)

THE WITNESS: I have a statement.

BY MR. PAXSON:

Q. Have you got such a statement?

A. I have a statement that shows the purchases of so called economy energy for the year 1937, the year 1936 and from August 26, 1935 to December 31, 1935. I have nothing for the year 1938 from January 1st.

Q. To March 14th?

A. To March 14th, because they wasn't any.

Q. Then your statement which you made from recollection before refreshing your mind with this memorandum was inaccurate when you said you thought there was some

economy flow between January 1, 1938 and March 14th, 1938?

A. If I said any in 1938 to March 14th, it was incorrect. We took none up to March 14th.

Q. No purchases of economy energy up to March 14, 1938?

A. No.

Q. Let us work backwards, let us take 1937. When was economy energy purchased for Staten Island from Public Service Electric and Gas, and how many times?

A. Two times only in 1937, the whole year.

Q. Just twice in the year, 1937, is that right?

A. That is right.

Q. And none between January 1, 1938 and March 14, 1938?

A. None.

Q. Just tell us about this transaction, the dates, quantities and times.

A. Will you repeat your question, Mr. Paxson?

Q. Just tell us the dates and times and amounts of kilowatt hours taken in those two instances in 1937.

A. In 1937 we purchased economy flow energy April 29th, from 7:30 a. m. until 5:45 p. m., a total of 9,100 kilowatt hours. April 30th we purchased economy flow energy from 10:00 a. m. to 5:30 p. m., a total of 4,500 kilowatt hours.

Q. What is the total of the kilowatt hours of economy flow energy in that year?

A. 13,600, those two days, that is all there was in that year.

MR. McALLISTER: What is that, 13,600?

THE WITNESS: 13,600, 9,100 and 4,500, unless I have made a mistake.

BY MR. PAXSON:

Q. Well then, 13,600 kilowatt hours represents the

entire amount of economy flow energy taken by Staten Island from Public Service Electric and Gas for approximately 15 months prior to March 14, 1938, is that right?

A. That is right.

Q. Now, how about the year 1936?

A. In 1936 we took some on different dates, several different dates.

Q. Well, there is quite a few more.

A. Quite a few more, yes.

Q. During what months would you say that was taken?

A. One in March, two in April.

Q. Twice in April?

A. Only once in March, twice in April, nine times in May, 14 times in June, 10 times in July.

Q. And the rest of the year of 1936 you took none?

A. That is right.

Q. How about the period from August 26, 1935 to December 31, 1935? Were any purchases of economy energy made by Staten Island from Public Service?

A. In that period? From August 26, 1935 to December 31, 1935?

Q. Yes.

A. Ten times.

Q. Then on these statements you have got the exact times, what day, as well as the date on which economy energy was purchased?

A. Yes, sir.

Q. For instance, take this period August 27, 1935 where you say from 9:00 a. m. to 4:00 p. m. Would you know whether the flow was constant between that time, or could you tell? You have just given the two periods between which 7,900 kilowatts were taken?

A. That is right. I can't tell.

Q. Those are the outside limits of time?

A. Those are the outside limits of time.

Q. During which 7,900 kilowatt hours was taken?
A. During which 7,900 kilowatt hours was taken.
Q. During which 7,900 kilowatt hours was taken?
A. Yes, sir.
Q. And you have on the outside right-hand column the number of kilowatt hours of energy that was taken in each of the instances listed, is that correct?
A. That is right.

MR. PAXSON: Now, if the Commission please, I offer this statement as Respondent's Exhibit No. 3, purchases of economy energy by Staten Island Edison from Public Service Electric and Gas for the period August 26, 1935, to March 14, 1938.

MR. McALLISTER: Mr. Examiner, I make the same objection in connection with this exhibit as I made with respect to the previous exhibit, and ask that the respondent supply for the record information as to the time when economy energy was supplied to Staten Island by Public Service subsequent to the period ended March 14, 1938. I don't know just which way Mr. Paxson thinks so far as the 14th is concerned, but I presume that there was no flow on the 14th or you would report that?

MR. PAXSON: If you are not clear about that I think I had better bring it out in the exhibits.

MR. McALLISTER: I think that would be entirely appropriate.

BY MR. PAXSON:

Q. Mr. Lytle, in all of these exhibits which purports to give the amount of emergency power taken and economy flow taken between the period January 1, 1938 to March 14, 1938, is March 14, 1938 inclusive?
A. It is inclusive; yes, sir.

MR. PAXSON: I think that answers that question.

BY MR. McALLISTER:

Q. I also understand it is to be your testimony that your records do not show any economy flow from January 1, 1938 to March 14, 1938?

A. Economy flow in 1938?

Q. Yes.

A. No, it didn't show any.

MR. McALLISTER: So my request, Mr. Examiner, is limited to the period subsequent to March 14, 1938, down to the present time, reasonably near, I am not greatly concerned about the time, but let us say up to the beginning of this hearing, and for that information I now make formal request upon the respondent.

EXAMINER SPENCER: Let the statement of purchase of economy energy be admitted as Respondent's Exhibit No. 3, and on the request of counsel for the Commission ruling will be made later.

(The document referred to was marked Respondent's Exhibit No. 3 and received in evidence.)

EXAMINER SPENCER: You may proceed.

MR. McALLISTER: May I have an exception to the Examiner's ruling, please?

EXAMINER SPENCER: Yes.

BY MR. PAXSON:

Q. Now, Mr. Lytle, you have testified as to the quantities of electrical energy coming from Public Service Electric Gas Company to Staten Island Edison Company in so far as the emergency transactions and economy flow transactions are involved.

Now besides those two types of transactions do you have any incidental, involuntary or slop-over power flowing over this connection?

A. Yes, we have.

Q. Explain that to us a little bit.

A. It is practically impossible to prevent energy flowing over a closed interconnection of this type. There is a certain amount of energy that is uncontrollable. I might say unpredictable. That isn't very close, but it just comes and we put up with it. We call it incidental power because it is something we didn't ask for and don't want. We just can't help it.

So long as the interconnection is closed it is going to flow. It flows away from us and to us. We have no control over the times. Our own operators are instructed at all times to keep it down to a minimum. That is consistent with our arrangement with Public Service Electric and Gas Company. We have no right to deliberately take it. We don't deliberately take it. We send it back as soon as we can. Our operator has a meter in front of him. There is an operator at the office from which the system is controlled and a meter that reads both ways. His instructions are and as far as I know they always do it, to keep that indicator on zero so there won't be any. You can't do it perfectly. Some goes over, some goes both ways.

Q. As I understand what you told us you make an effort to keep this indicator at zero, but because you have what we call a closed interconnection some power is likely, or in the natural course of events slips over one way or the other. It is like the ebb and flow of the tide. Is that a pretty good figure?

A. That is a pretty good figure, yes. We do the best we can and don't do it perfectly. Let us put it that way.

Incidentally, I have cautioned my men from time to time, time and time again to keep that on zero within the limit of the line's ability to do it; and it would be violating

our agreement with the other companies to deliberately take the power and we don't need it anyhow.

Q. And you don't want it?

A. And we don't want it.

Q. When it comes over, what do you do about it?

A. It is metered. Well, when it comes over, as soon as he sees it coming over, the operator changes the load on our plant. When it comes over to us he picks up that load, raises the load in our plant so it won't come over. If it is going the other way he reduces the load.

Q. In other words, he stands there in front of the indicator and if he sees incidental power coming over he makes every effort to push it back by putting on steam?

A. What he actually does, he adjusts the turbines, he telephones to the power station, there is a direct line, no time lost, he tells them to pick up some load or drop some load, whichever is necessary to reduce that to zero as near as possible.

Q. But you say you don't want the power?

A. No; we don't want the power.

Q. If you have the switch open I don't suppose you would get it, would you?

A. No.

Q. Why do you keep the switch closed, then?

A. We keep the switch closed for emergencies. We keep the switch closed to safeguard our customers. We are selling service.

Q. And you think it better to keep that switch closed in order to get your emergency service when you need it even if as an incident thereto some of this power goes back and forth?

A. Yes, I think it is better.

Q. Does this incidental flow have any commercial significance?

A. Has no commercial significance at all. We don't want it. We send it back as soon as we get it regardless

of what our load is. No matter whether our load is light or heavy, we stop it right away. We have to supply our customers with service. You picture yourself, suppose you consider this incidental power alone and you are reading, you are a customer of ours, for two seconds you were able to read and two seconds your lights go out. It is ebbing and flowing the other way. It is out for a few minutes and comes on. We could not sell that service. That has no commercial value. We could not do business that way.

Q. Mr. Lytle, do you buy any firm power of Public Service?

A. No, sir.

Q. Do you sell any firm power to Public Service?

A. No, sir.

Q. Do you have any firm power agreement with any other company of a public utility nature?

A. No, sir; we have no firm power agreement with any of them.

Q. Now getting back again to this incidental power, does it affect your normal operations in any way, this incidental power coming over and going back?

A. No. We would operate exactly the same if we could prevent its coming over. It does indicate a certain amount of loss. That is the disadvantage of the thing.

Q. Do you use this incidental power to meet your load or depend upon it?

A. Absolutely no dependence placed upon incidental power. Absolutely none.

Q. Do you know where the emergency power or economy flow power supplied to you from Public Service Electric and Gas Company comes from?

A. We get it from Mechanic Street Substation of the Public Service Electric and Gas. All our negotiations, all our agreements, all our talks with them, they led us to believe that it was power generated by Public Service Electric and Gas Company.

Q. When it comes to the question of determining how much you will pay for this economy flow power do you have a right to inspect their figures so as to be certain of that?

A. Yes. We have a right to inspect it in as much detail as we want their generating cost, and they have the same right with us. They have been over there and checked. We don't do it every time. They take us on faith when we quote figures and we take them on faith when they quote us. Representatives have been over at Staten Island, representatives of Public Service, checking our costs and inspecting our plant. We believe one another when we quote a price.

Q. Mr. Lytle, is there any arrangement, any contract, any understanding, written or verbal of any kind, character or description whereby you are entitled to receive any power from Jersey Central Power & Light Company?

A. No, sir.

Q. Over facilities owned by the Public Service? Do you have any dealings with them?

A. None at all.

Q. You, of course, do know that Jersey Central Power & Light Company does supply some power to Public Service?

A. We know they are interconnected. Just what their arrangements are we know absolutely nothing except what we pick up generally. We know they are interconnected. The Jersey Central Power & Light Company, I don't know what all they have. They have never been mentioned in our price negotiations. We always understood we were getting it from Public Service, anything we got.

Q. That was always your understanding?

A. I always thought they supplied it.

Q. Still think it, don't you?

A. Well, they do.

Q. Of course they do supply it.

MR. McALLISTER: That is going a little bit too far.

BY EXAMINER SPENCER:

Q. Do you know whether they do supply it?

A. Whether?

Q. Do you know of your own knowledge whether it is supplied by Public Service?

A. It has always been my understanding they supplied it.

Q. You do not know?

A. I have never gone into any part of their interconnection, I have never had any right.

BY MR. PAXSON:

Q. Then your transactions with Public Service are in no way related to transactions of Public Service with Jersey Central?

A. No.

MR. McALLISTER: Just to clear that up you are referring to contractual relations?

MR. PAXSON: I say transactions, which mean any transactions between Staten Island Edison and Public Service Electric and Gas, whether it is contract, whether it is an oral arrangement, whether it is an understanding or anything.

BY MR. PAXSON:

Q. Any transaction that they have with Public Service, as far as you are concerned, Staten Island Edison is concerned, is in no way related to what Public Service may have had at any time or the same time have with some other company like Jersey Central?

A. No.

EXAMINER SPENCER: All right.

BY MR. PAXSON:

Q. Do you know whether Public Service has generating capacity available on its circuit which supplies Mechanic Street sufficient to supply you with the power?

A. I do from general knowledge. I don't mean something I read some place, but in talking with the other fellows they tell us how they operate, what capacity they have on, what their peak load is, and I know positively from that that they have more capacity available than we take or would take. As a matter of fact, more than we could take.

Q. Now there is one question I want to ask you in connection with incidental power which I forgot at the moment.

You say every effort is made to send it back. Over the course of a year with respect to this incidental power does it balance or doesn't it?

A. It balances pretty closely. I haven't got the exact figures, but it balances pretty closely. I do remember this, as a percentage of our output it would not be one half of 1 per cent, the difference in what we supply for emergency power or what they supply us, or vice versa. That difference is negligible. It is less than one-half of 1 per cent of our output.

Q. Are you talking now about the energy that flows no matter what type or are you giving your percentage as to the incidental power?

A. I am talking about the incidental power.

Q. The amount which comes over from Public Service of incidental flow would not be one half of 1 per cent?

A. No, the difference in what comes over from them, over or under the amount that comes to them from us would be less than one-half of 1 per cent of our total system output, our total generation. It is very small. In fact some years a little more came from us than went to them

and other years it is the other way around. I haven't got that in exact figures.

Q. You say it is involuntary; it goes one way and flows back another. What do you do with the excess. Do you account for the excess and balance that at the end of the year?

A. Yes, we pay them and they pay us for what flows over their meters and we pay them for what flows over to us.

Q. What is the price?

A. We try to find an average increment cost. I think the price now is 2.7/10 mills.

Q. No matter which way the excess is, it is the same price?

A. The same price.

Q. I mean if there was a little excess of incidental power that goes to Public Service that is a fixed price you have agreed on, and if the other way it is the same price?

A. The same price, yes. That is adjusted each month.

Q. Now, how long has Staten Island Edison and Public Service interconnection been operating?

A. It was installed late in 1925 and has been operated ever since, not continuously. It has been in and out. Sometimes it was out. In the early days I can't tell why it was out.

Q. It was established in 1925?

A. In 1925, yes.

Q. For what purpose?

A. For the purpose of supplying emergency energy.

Q. Now, Mr. Lytle, you heard Mr. Grimsley's testimony, did you not?

A. Yes, sir.

Q. You have been here throughout these proceedings?

A. Yes, sir.

Q. Mr. Grimsley gave some testimony to the effect that Staten Island Edison Corporation was dependent ap-

on Public Service Electric and Gas Company for this connection. Is that true or not?

A. It is not true that we are dependent upon them.

Q. Do you rely upon them?

A. We do not.

Q. In any way?

A. No, sir.

Q. To carry any part of your load?

A. In emergencies only, in case of the breaking down of facilities.

Q. Let's go back to the capacity of the Staten Island. What is the capacity of the Staten Island?

A. Do you mean the generating plant?

Q. Yes.

A. And power house?

Q. Yes.

A. 47,500. That is the name plate data. Actually it is good for a little more than that.

Q. That is what we want the rated capacity?

A. Yes. I will say that that is the capacity this Commission asked for in their report. I think they asked for that.

Q. What report are you speaking of?

A. In some report, although I don't know just what you call them. I understand they asked for the name plate capacity.

Q. When you talk about capacity, Mr. Lytle, and you say 47,500 k. w. h. capacity, are you talking about what engineers call the rated capacity?

A. The rated capacity of generating equipment.

Q. What do you engineers mean by rated capacity?

A. That a turbine will carry at its most efficient water rate of steam rate. With the turbine I would say that is the load the machine will carry at its most efficient water rate or steam rate.

A turbine on light load is not as efficient as it is at

full load. A turbine overloaded is not as efficient as it is at what you would call the rated load or full load. However, it can carry more load than the rated load.

Q. What would you say is the actual capacity in the Livingston station?

A. About 53,000, or something on that order, or $54,000.

Q. About 54,000?

A. Yes. I think it would carry that. I know that it would carry that. I know we can. I know it would carry more than that.

Q. I suppose there is some limit. If you have generating equipment which has a generating capacity of, let us say, 50,000, is it generally true—I am asking you now as an engineer—that those engines can carry more?

A. Will you please repeat the question?

EXAMINER SPENCER: Will the Reporter read the question, please?

(The question was then read by the Reporter.)

BY MR. PAXSON:

Q. What is your answer?

A. Yes.

Q. Of course, there is a limit to what they can carry?

A. Yes.

Q. Is this a correct statement, that when you talk about rated capacity that means that under any and all circumstances if you do not carry any more than the rated capacity you are operating very safely? Does safety have anything to do with it?

A. Oh yes; it has plenty to do with it from an operating standpoint. My job is primarily to see that the service is reliable. It is up to me to see that the machines are carrying such loads as they can carry with, I would say, plenty of spare capacity in them, running and spinning.

Q. When you speak about your capacity of 47,500, does that include any of what you call cold reserve, or is that spinning capacity, or what?

A. It is rated capacity of all the machines in the plant. It does include the cold reserve, however.

Q. Of what does that cold reserve consist?

A. Two turbines, one of 10,000 rated capacity and one of 6,000 rated capacity.

Q. What are the others that are spinning all of the time? 16,000 did you say? And then what are the others? Are they 15,000?

A. We have two rated at 15,000 each that do most of the work or that are running most of the time. However, these other two that I mentioned, the 10,000 and the 6,000, are available to operate on about a half hour's notice. That is, we can start them on a half hour or three-quarters of an hour's notice. They are kept in good operating condition; that is, normally.

Q. Normally, as I understand your testimony, you have these two generators having a rated capacity each of 15,000 k. w. operating to carry your normal load, with additional turbines having additional capacity of 16,000 k. w. that are waiting?

A. Yes, sir.

Q. And you say you can start them in a half hour or three quarters of an hour?

A. Yes, sir.

Q. Is that right?

A. Yes.

Q. These two generators that are spinning all of the time, of course, you have to repair and paint? I don't suppose you keep them running all of the time, do you?

A. No, sir. Our practice is to take them down about once a year for overhauling, general maintenance, and so on. Of course, that is one at a time.

Q. You would not take both of them down at one time?

A. No; we do not work it that way. We don't need to do it, and we haven't got the men to do it.

Q. Suppose you want to take one down for what you call normal repairs, which you say you do every year; then, what do you do?

A. We start one of these others, the 10,000 or the 6,000, depending upon the load.

Q. You then utilize the reserve capacity before you interfere with the operation of the two 15,000 generators?

A. Yes.

Q. Or either one of them?

A. Yes, sir.

Q. Now, Mr. Lytle, what was your peak in 1937?

A. In 1937, you say?

Q. Yes.

A. In 1937 the peak on Livingston station, that is, the peak on the system of 31,700 kilowatt hours, was for the hour from 6:00 p. m. to 7:00 p. m. As I remember it, it came on December 27th. I think it was on that date.

Q. Then, on December 27th between the hours of 6:00 p. m. and 7:00 p. m. you had a peak which was the highest peak for the year, as I understand it.

A. It was the highest peak for the year 1937.

Q. 31,700?

A. Yes.

Q. That is, k. w.?

A. 31,700 kilowatt hours for one hour. It meant an average of 31,700 k. w. for that hour.

Q. An average of 31,700?

A. That is right.

Q. Now, at your peak in 1937 did you utilize any energy coming from Public Service Electric and Gas Company to carry that peak?

A. No, sir; unless there was a little bit of slopover.

I think there was. Later on, quite some time afterwards, I checked, and as I remember it, there was a little bit of slopover going to them, but not very much. I don't know how much there was. Over that hour there was a little that came to us and a very little bit went over to them; but they were very small amounts. It would be less than a thousand.

However, I cannot give you an exact figure on that. I can give you this on that hour. I do remember this, because I have to pay rather strict attention to our peaks for various purposes. Very often I am in the power house, and if I knew a peak was going to come, that is, the highest peak, I would be there right at that time. I try to anticipate it. And some times I go two or three days in succession and try to get it. On this day I asked the system operator, who has charge of operating the system and who looks at this meter which shows the interconnection, and I wanted to know for my own information what that peak was, and he said he was about balanced. That meant he was holding it around zero. So I presumed from that that if there was any slopover it was simply what he could not catch at all.

Q. I thought you said a little while ago that during this peak hour in 1937 the balance was a little bit the other way?

A. I did say that, because about that time I checked the meters that we have at the Atlantic substation and they indicated that there was a little excess energy that flowed to Jersey, that is, several hundred k. w. h. But, as I say, I do not have the exact figures. At that time I did not consider it particularly important a little flow one way or the other, and since it was away from us I was not worried about it.

Q. Mr. Lytle, is it or is it not true that you rely upon the Public Service Electric and Gas Company and this interconnection to carry your peaks?

A. We do not rely upon Public Service Electric and Gas Company to carry our peaks.

Q. You do not lean on them in any way?

A. No; we do not lean on them in any way. And it is a very distinct agreement with them that we shall not. Otherwise, if we did, they would charge us for it at a much higher rate than they do for any incidental that comes or economy flow. We would pay a higher rate for it.

Q. They would charge what is called a firm basis?

A. They would charge us on this emergency basis. They would simply declare that it was an emergency. We have been very careful in our operating to keep faith with them. We cannot do business with them day after day through men under us unless we are very careful to do what we say we will do, within the limits of a man's ability to do it.

Q. The other day Mr. Grimsley made the statement which appears on page 307 of the record, as follows:

"When Staten Island peak is right up to the rating of these two generators then she is depending upon that swing there for that excess that may come on her own system, depending upon Mechanic Street for that."

I will ask you if that statement is correct?

A. We are not depending upon Public Service Electric and Gas Company through that interconnection for steady loads or swings, or either one of them, and we have not been. I am referring to this peak.

Q. Have you ever supplied any electric energy to Public Service Electric and Gas Company for the use of Jersey Central Power and Light Company?

A. No; not that I know of never. They would be violating their part of the agreement if they took power from us for somebody else, that is, for another operating property.

Q. Then, as I understand your entire testimony, Mr. Lytle, that interconnection is for emergency service only?

A. That interconnection is put there for emergencies.

Q. But you have occasionally called upon Public Service Electric and Gas Company for what you call economy flow?

A. We have.

Q. And there is nothing firm?

A. And as to economy flow, that is not of very much commercial value. They can stop it at any time they want to. We cannot depend upon it. We cannot sell a customer on that idea; we cannot go to the customer and agree to furnish him so many kilowatts a month or so much demand and have him say, "Where will you get it?", and then say "We get it from Public Service Electric and Gas Company, and they can cut it off at any time they want to".

Q. Then Mr. Lytle, is it a true statement that you always have capacity to take care of your own load on your own line?

A. It is a true statement that we always have capacity to take care of our own load on our own line, that is, on our own system; on all of our lines.

Q. Going back to this question of routine inspection and maintenance; when is that usually done?

A. It is usually done in the summer time when the peak loads are lighter.

MR. PAXSON: You may cross examine.

EXAMINER SPENCER: Gentlemen, we will recess for five minutes.

(Thereupon, a short recess was taken, after which the following occurred.)

EXAMINER SPENCER: Gentlemen, the hearing will be resumed.

You may proceed with the cross-examination of the witness, Mr. McAllister.

Cross Examination

BY MR. McALLISTER:

Q. Mr. Lytle, during what periods of time in 1937 did you operate the generator which is rated 6,000 k. w.?

A. During what periods?

Q. Yes.

A. I do not have the exact dates. I will have to get them for you. It was probably in the summer months. I don't remember that.

Q. Did you operate it at all during 1938 up to the present time?

A. Up to the present time or up to this date?

Q. Up to this present time.

MR. PAXSON: If the Commission please, I object to any questions with respect to any periods subsequent to March 14, 1938.

EXAMINER SPENCER: The objection is overruled. You may have an exception.

THE WITNESS: Up to the present time?

BY MR. McALLISTER:

Q. Yes; up to the date on which this hearing began, because you have been away and I do not expect you to be in daily touch regarding that matter. It is just a relative thing.

A. I do not believe we have. I am not certain.

Q. You do not believe you have?

A. I do not believe we have. We may have once on one day.

Q. Can you obtain that information and supply it for the record, showing the times during 1937 and up to the date on which this hearing began?

A. I can obtain it but I cannot give it to you from what data I have with me. I will have to go back to our records for that information.

Q. Showing the dates and the number of hours and the generation of that unit?

A. That information is available at our power house and I can get it. I do not have it with me.

Q. Will you undertake to obtain it and furnish it for the record in this case?

MR. PAXSON: If your Honor please, I still have my same objection. It is no part of this case. Any information subsequent to March 14, 1938 is not a part of this case, and we will not offer it. We will furnish it to the Commission if he requests, and he can do with it what he pleases.

EXAMINER SPENCER: Let the record show the witness will procure this information and furnish it for the record, and that any statements subsequent to March 14, 1938 are objected to by counsel for Respondent.

MR. PAXSON: And any information which is furnished for a period subsequent to March 14, 1938 is no part of Respondent's case.

EXAMINER SPENCER: That is right.

MR. PAXSON: I object to it.

THE WITNESS: It is available. I do not have that information with me. It is available at our power house at Livingston, at Staten Island, and I can get it.

EXAMINER SPENCER: And then what is your answer in response to the question asked by Mr. McAllister?

THE WITNESS: That is a request? Is that right?

BY MR. McALLISTER:

Q. Will you undertake to obtain it and furnish it for the record in this case?

THE WITNESS: No.

EXAMINER SPENCER: You will not?

THE WITNESS: Under advice of counsel I will not attempt to get him information having to do with the operations after that date, March 14, 1938.

MR. PAXSON: If the Commission please, we have no reluctance at all to furnish this information, and if the Commission wants it we will be glad to give it to them for any use that the Commission wishes to make of it, or to Mr. McAllister. But the question was: Will he furnish it for the record.

We will not furnish it as part of our case so that we can be bound in any way thereby on our theory of this case. But we do not mean we are in any way recalcitrant. He may have it. The information is available.

MR. McALLISTER: As a part of the cross-examination, Mr. Examiner, I am entitled to ask that the witness supply that part of the information, which becomes and is a part of his response that he does not have the information, that he does not have it with him. But he said before that it was available and could be supplied and that he would undertake to supply it.

Now, if Mr. Paxson has any valid objection to it he can record that objection in just the same manner that he can record an objection to any other question that I may put on cross-examination.

It is information that I have requested. I have requested that it be supplied for the record by the Respondent for the information of the Commission, and I have not asked him to supply it to the Commission for their information in an informal way, but

I have asked that it be supplied by the Respondent as a part of the pertinent facts in this particular record. I want that understood definitely.

EXAMINER SPENCER: Definitely understood by whom?

MR. McALLISTER: On the record, that is, definitely understood on the record as to what I am asking and my reason for it.

EXAMINER SPENCER: Have you finished?

MR. McALLISTER: Yes, Mr. Examiner, I have finished.

MR. PAXSON: May I make a suggestion?

EXAMINER SPENCER: Yes, Mr. Paxson.

MR. PAXSON: Perhaps we are barking up a tree here finintentionalfy and perhaps I am over-technical. I do not wish to be. I have an objection to make and this suggestion: This information will be furnished as requested, over my objection which has been noted on the record, so long as it appears clearly that it was furnished at the request of Mr. McAllister, Counsel for the Commission, on cross-examination.

Perhaps that will settle it.

MR. McALLISTER: Thank you.

EXAMINER SPENCER: We haven't got the record in any shape yet at all. We have to have the record show something definite.

Off the record, please.

(Thereupon an informal discussion occurred which the Reporter was directed not to record, after which the following occurred.)

EXAMINER SPENCER: Let the record show that by agreement of counsel the information requested, and also the information as to the emergency energy purchased by the Staten Island Edison Corporation and the economy energy purchased by the same corporation subsequent to March 14, 1938, is to be furnished by the witness in the form of an exhibit for the Commission.

MR. McALLISTER: Mr. Examiner, I do not think there is any basis for that. It is submitted as a part of the cross-examination. I will grant the designation you give it does not amount to a row of pins; but it seems to me it is not an exhibit that is submitted on behalf of the Commission. It is the completion of data which are a part of the information supplied by Respondent. And I am merely asking that it be made complete and be brought down to-date. It is supplementary to the information which they did supply.

EXAMINER SPENCER: Let the record show that it will be submitted by Witness Lytle in the form of an unverified statement.

MR. McALLISTER: I will object to that, Mr. Examiner. If it is submitted as a statement I will assume that it carries with it the oath that he has sworn to here on the witness stand.

EXAMINER SPENCER: Mr. McAllister, it has to be somebody's exhibit.

MR. McALLISTER: But I thought you said "unverified".

EXAMINER SPENCER: If it is going to be an exhibit it will have to be somebody's exhibit.

MR. McALLISTER: It can be identified by any

number you care to give it, Mr. Examiner; but it reasonably should be a supplement to the exhibit of which it is a part. But when you say "unverified"

EXAMINER SPENCER: By that I mean it would not be sworn to. No exhibit is sworn to.

MR. McALLISTER: No, Mr. Examiner, but it carries the identification and the verities that attach to the oath of the witness who puts it in.

MR. PAXSON: We do not object to the verification. If it is furnished, it will be true. But we are not offering it as an exhibit. We are supplying it over my objection at the request of Mr. McAllister on cross-examination.

EXAMINER SPENCER: Instead of an unverified statement it will be a verified statement.

Such statement to be furnished within how long? How long will it take you to furnish it, Mr. Lytle?

THE WITNESS: I will have to make a trip up there. I can go up there tomorrow and come back day after tomorrow.

EXAMINER SPENCER: We do not mean for you to come back with it. But it will be received as your evidence as a verified statement. Can you do it within a week?

THE WITNESS: Yes, sir. I think it could be furnished within a week. To the best of my knowledge, it could be furnished.

EXAMINER SPENCER: On or before October 10, 1938?

THE WITNESS: Yes, sir.

EXAMINER SPENCER: You may proceed.

BY MR. McALLISTER:

Q. Mr. Lytle, with respect to the 10,000 k. w. generator which you stated was maintained as cold reserve, at what times and during what number of hours was that generator in service connected with loads during the year 1937?

A. I have not the exact record in mind, you understand, but it was over a period of six weeks, I believe, every day. It wasn't the full day, but part of every day. That is the best of my recollection. I would have to check my records for that information. It was an appreciable length of time—not just a half hour to bring it up and start it up. We actually depended upon it. It was in good condition.

Q. That was in 1937 to which you refer?

A. During 1937. But I say I would have to give you that information with the qualification that I do not remember distinctly. I cannot keep in mind all of those hours and days. But it was right in that time, I am quite sure.

Q. To secure that information what records would you consult?

A. The power house logs.

Q. And you rely upon those log sheets?

A. Yes.

Q. As the records of what transpires in the generating plant?

A. I rely upon them; yes, sir.

Q. And, likewise, the records and log sheets that you maintain at your substations provide you with reliable information? Is that true?

A. I rely upon them.

Q. And during 1938, that is, from January 1, 1938 to the date on which this hearing began, did you make any use of this 10,000 k. w. generator; that is, was it carried on the line and connected with loads?

MR. PAXSON: That is objected to so far as any period subsequent to March 14, 1938 is involved in the question.

EXAMINER SPENCER: The objection is overruled. An exception is noted.

You may proceed.

THE WITNESS: Yes; it was used.

BY MR. McALLISTER:

Q. Do you recall during what periods?

A. I would say July and August. I will say this, that it was used for an appreciable time.

Q. Just to make the record complete in that respect also, Mr. Lytle, will you supply the same information with respect to the 10,000 k. w. generator that you are to supply with respect to the 6,000 k. w. generator for the same period?

MR. PAXSON: If the Commission please, of course, I have the same objection. We are willing to supply that if it is understood it is being supplied at the request of Mr. McAllister on cross-examination and not any part of the exhibits submitted by us.

EXAMINER SPENCER: Let the record so show.

Can you furnish that by October 10th also, Mr. Lytle?

THE WITNESS: Yes, sir.

BY MR. McALLISTER:

Q. And that will show the periods and times when it was connected with loads and the quantity of energy generated by it?

A. Yes, sir.

Q. What is the distance from your Atlantic substa-

tion to the Livingston Plant?

A. Approximately 15 miles.

Q. Is that line distance?

A. Yes. It is 15 to 16 miles. There are two circuits leading around there. That is over one of the circuits.

Q. Will you please describe the circuits which do connect the Richmond plant with the Atlantic substation?

A. The Livingston plant with the Atlantic substation?

Q. Yes.

A. There are two 33 k. v. lines that run from Livingston power station to Eltingville. There are two other 33,000 volt lines that run from Livingston power station to Eltingville over a different route. They come together at Eltingville.

Q. What is the distance over each one of those?

A. May I refer to the notes and may I get them?

Q. Certainly.

A. Well, does that document there give it?

Q. I don't know whether it does or not.

A. Well, this (indicating) does give the distance. The route I first mentioned is 57,795 feet. As to the second route, I will have to add these together. The second route that I mentioned would give a distance of 59,177 feet, if my addition here is correct.

Q. Now, will you follow the course of those lines on to Atlantic substation?

A. From Eltingville there are two circuits on the same pole line, which is a distance of 24,106 feet.

Q. What substations do you maintain on your system in addition to the Atlantic substation?

A. We maintain the ones at Livingston, Arlington, St. George, Clifton, South Beach, Oldtown, Grant City and Eltingville in addition to the Atlantic substation. I think those are all of them.

Q. Are those substations all connected by the trans-

mission line or lines which you described as indicating the distance from Atlantic substation to the generating plant at Richmond or the Richmond generating plant?

MR. PAXSON: That is objected to. I object to the use of "transmission" line unless he defines what he means. If he wants to say "lines" without designation as to transmission or distribution, I have no objection.

EXAMINER SPENCER: Are they transmission lines?

THE WITNESS: I do not consider them transmission lines. I consider them distribution lines.

EXAMINER SPENCER: I did not catch the significance of that question. Will the Reporter read Mr. McAllister's question?

(The following was then read by the Reporter:)

"Q. Are those substations all connected by the transmission line or lines which you described as indicating the distance from Atlantic substation to the generating plant at Richmond or the Richmond generating plant?"

EXAMINER SPENCER: The objection is overruled.

THE WITNESS: I do not consider them transmission lines. Well, I will have to get that question again.

EXAMINER SPENCER: Will the Reporter read the question, please?

(The question was again read by the Reporter.)

THE WITNESS: All of those substations are connected by distribution lines.

BY MR. McALLISTER:

Q. There are no transmission lines between those substations?

A. No transmission lines. I do not consider them transmission lines.

Q. What is the voltage of the lines which connect Livingston generating station with the Atlantic substation?

A. 33,000 and 6,900. We can also connect through there on 2,300.

Q. Is there no 33 k. v. transmission line connecting the substation with the Richmond generating plant?

A. There is no 33,000 volt transmission line. There is a 33,000 volt distribution line.

Q. There is a 33,000 line connecting the Richmond plant with the Atlantic substation?

A. There is a 33,000 volt distribution line connecting Atlantic substation with Livingston power station.

Q. How do you get the energy down to Atlantic sub station or in the reverse direction without a transmission line?

A. We get it over a distribution line.

Q. It is transmitted, isn't it?

A. It depends upon the definition of the terms, I think. Power will flow over any line. You can call it a transmission line or distribution line or you can call it a service loop.

Q. Why do you distinguish it? What are the pertinent characteristics of this line which distinguish it?

A. I distinguish it in this way: we serve customers off of and sell power off of the 33,000, 6,900 and 2,300. The routes of those lines, I will say, that is, the routes of the 33,000-volt lines are determined by power customers. The power customers' locations determine the route of those lines.

Q. Do you sell off of those lines direct?

A. That is correct. We sell power off of those 33,

000 volt lines direct. We sell them at 33,000, that is, we sell customers at 33,000 volts.

Q. What customers do you have and what are their locations?

A. There is one customer.

Q. What is it?

A. Staten Island Rapid Transit Railway Company. The locations are Atlantic, Eltingville, Oldtown, South Beach, St. George and Arlington. I think those are all at which we sell them 33,000 volt service.

Q. What customers do you have on the 6,900 volt line?

A. We have other customers, we have other power customers. I cannot give you an entire list but I can mention some of them if you wish me to do so. I can mention some of the customers we serve off of the 6,900 volt distribution line. They are United States Gypsum Company, Bethlehem Shipbuilding Company, Standard Varnish Company, Brewer Drydock Company and Nassau Smelting Company. There are a number of them. We have a number of others but I cannot give you all of the customers. We have 47,000 customers.

Q. Where is that 6,900 volt line or the line to which you referred, Mr. Lytle?

A. We have 6,900 volt lines running out of Livingston, Arlington and Atlantic and Eltingville. I think those are all. Yes; those are all substations.

Q. Are any of those 6,900 volt lines a part of the circuits which you described as connecting Atlantic substations with the Livingston generating plant?

A. Those circuits can be made continuous. Normally we do not operate them as a solid connection between Atlantic substation and Livingston power station. We can by throwing the switches. It is only a matter of throwing switches.

Q. It is a by pass, if you want to make it such?

A. It can be. It can be connected solidly through.

Q. What I am referring to is the description of the lines or circuits from Livingston generating plant to Eltingville. You described two circuits, didn't you?

A. I described two 33,000 volt circuits.

Q. Those are two 33,000 volt circuits?

A. I described two 33,000 volt lines. It is a double circuit line. There are really four circuits from Livingston to Eltingville.

Q. The two follow one path?

A. That is right.

Q. Or the two follow one course?

A. Yes.

Q. And the other two go around in the other direction?

A. Yes, sir.

Q. And you have a 33,000 volt line from Eltingville, Mr. Lytle, to Atlantic Substation which is a continuation in reality of the four that we have been describing heretofore?

A. Yes; two circuits on that one line.

Q. So you have these two complete double circuit lines between the Atlantic Substation and the generating plant at Livingston?

A. There is one small exception there—just being accurate about it—between Eltingville and the next adjacent substation on one of those routes, which is Grant City. There are two lines on the poles, but they are tied through a circuit breaker on each end. Do you understand what I mean?

Q. Yes.

A. They are really operated as one circuit.

Q. But the capacity is not diminished by it?

A. No. The same is true for that section from Grant City Substation to Oakdale substation.

Q. That tie-in there does not diminish the capacity

of the line? I mean materially. It may incidentally; But it does not substantially alter the capacity of the line?

A. Yes; it does limit it. It does limit it, because of the capacity of the circuit breakers on each end of those sections.

Q. What is the capacity of those circuit breakers?

A. I will have to get my records on that. But I think those circuit breakers are 200 amperes 37,000 volt. I believe that is their rating.

Q. Then the 6900 volt lines to which you referred are not ordinarily a part of the circuits that join Atlantic Substation with the Livingston generating plant?

A. They are not ordinarily connected solidly through to Livingston.

Q. The other lines which you described are the lines which would ordinarily carry any energy flowing between those two points?

A. Yes, sir.

Q. In furnishing the distances between various points at the beginning of your testimony I believe you referred to this map (indicating), did you not?

A. I think you said you had it, or somebody there at the table said you had it.

MR. PAXSON: I think that map should be designated in the record.

MR. McALLISTER: It will be designated very clearly before I get through.

MR. PAXSON: Thank you.

BY MR. McALLISTER:

Q. I think you saw the map and you said "if it is on there I can give it from that."

A. It did look like a picture of our system, as a matter of fact.

Q. Will you identify it and state the source from which the information was obtained?

A. It was obtained from the transmission distribution department, apparently from the designation, or from the distribution department.

Q. I mean what the map is, if it is labeled, and then state for the record the source of the information.

A. It is a map that shows the 33,000 volt lines, single line drawing. It shows the 33,000 volt lines. I don't see here where it mentions that it is double-circuit or single-circuit, or anything of the kind. It shows the routes of the 33,000 volt lines.

Q. And it is labeled, is it?

A. If it is labeled 33,000 k. v. transmission system, it is labeled that. But I do not agree with that, so, far as that goes.

Q. And it was submitted to the Federal Power Commission as a part of the Staten Island Edisca Corporation's report to the Commission, as indicated by the cover page, "Power System Statement for the year ending December 31, 1937, made by Staten Island Edison Corporation covering Staten Island Edison Corporation, located in State of New York, to the Federal Power Commission", with the stamp of the Federal Power Commission. And it shows it was received July 21, 1938? That is correct, is it not?

A. That seems to be; yes. I did not make it up and I did not sign it. It seems to be all right. It isn't something that I signed.

Q. It is a statement and report signed by—Perhaps you can read this name (indicating).

A. William A. Kienzle, Comptroller.

Q. Comptroller of the Staten Island Edison Corporation?

A. Yes.

Q. What is this name?

A. Mange.

Q. That is his signature?

A. W. E. Mange. I am not an expert on that sort of thing. But I think it is.

Q. You are familiar with his signature, are you not?

A. Yes; I am familiar with his signature. It looks like it, surely. But I am not a handwriting expert.

Q. You are familiar with his signature?

A. Yes.

Q. And to all intents and purposes it appears to be his signature?

A. I don't want to take an oath that that is his signature. I am not that much of a handwriting expert. But I think it is.

Q. You have no reason to believe that it is not?

A. I certainly have not. If the Commission submits it I certainly believe so.

Q. I just wanted to clear it up in view of the fact you expressed some doubt.

A. I don't like to express a very positive opinion on a subject on which I am not capable of having a good opinion.

Q. And that map is supplied as a part of schedule 18 of the report?

A. Yes. I am taking your word for a lot of that.

Q. Will you please examine the report.

A. Schedule 18, System maps and diagrams. That seems to be all right. I wouldn't question it anyway, so far as that goes.

Q. So far as the 33,000 volt lines are concerned, you say you have one customer that takes off of those lines at that voltage?

A. Yes, sir.

Q. And that is through your substation, did I understand you to say, or is it direct?

A. Direct.

Q. Direct?

A. At 33,000 volts. It is sold and metered at 33,000 volts at various substations, and not only at one place. It is at various substations.

Q. That is what I am trying to get straight. Are all of the tie-ins through a substation?

A. At a substation?

Q. Yes; at a substation.

A. At a substation, not through a substation.

Q. Through a bus in the substation the connection is made?

A. They are off the substation bus.

Q. And if it were not for this customer then would you classify these lines as transmission lines?

A. If it were not for this customer we would probably not have those lines. Those lines were probably built primarily to supply that customer.

Q. Just forgetting the circumstances of the building and one thing or another, Mr. Lytle, if you were to eliminate those customers and the lines were to continue to operate with the load that they now carry, would that make them transmission lines?

A. No. I still would not consider them transmission lines, because we have considered having other customers in the past. We have negotiated with them on the basis of selling them off of those lines.

Q. Then let's eliminate those and still keep the load at the same level; would you then consider them transmission lines?

A. No.

Q. Why not?

A. Because they are entirely suitable and the routes are of such a nature that they would be and could be used for distribution.

Q. Would they be used for distribution under the circumstances that I relate?

A. Will you please repeat the circumstances? We are talking about something that may have happened or that might happen in the future.

Q. No; I am just asking you if you eliminate in the first instance the one customer that you now have, would you consider those 33 k. v. lines transmission lines.

A. Yes; I would. If they dropped off tomorrow I would still consider them distribution lines, because that is what they are good for.

Q. They would not be transmission lines?

A. I would not consider them a transmission line; no, sir.

Q. With the customer off? Then, what makes them a distribution line?

A. Because they are the type of line that can be used and are used. We are using them and other people are using them for distribution purposes.

Q. Then, what would you have to add to them to make them a transmission line?

A. I don't see how I can answer that—what I would add to them. I can't add anything to them there. You can build a new line that would be a transmission line.

Q. How would you alter the operation of them if you were attempting to convert them from a distribution line according to your ideas to a transmission line?

A. How would I alter them?

Q. Yes; alter the physical aspect of the lines and their operation.

A. I don't think you could alter them in the City of New York. I don't think you could do it.

Q. Are these lines all located on poles?

A. No, sir. There are some underground, underground cable. I can tell you what is underground.

Q. All right, Mr. Lythe. Will you do that, please?

A. This section shown in broken lines is underground cable (indicating).

Q. Just state the limits of it to show what it is.

A. This point here. I can give you the street there. It is Morning Star Road; from there to Livingston, and then from Livingston to St. George, and from St. George to Clifton. That is underground.

Q. It is only that part from Livingston generating station to St. George and from St. George to Eltingville?

A. To Clifton.

Q. Those two sections are the only two sections which enter into the make-up of the line between Livingston generating plant and Atlantic Substation?

A. They are the only two lines that make up what?

Q. They are the only two underground cables that go to make up a part of those circuits we mentioned?

A. You are not discussing the section running to Arlington? Is that what you mean?

Q. Yes.

A. The part from Livingston to St. George and from St. George to Clifton are underground.

Q. And that is shown in a broken line on the map which is a part of schedule 18, which is included in the Power System Statement to which reference was made a short time ago?

A. Yes.

EXAMINER SPENCER: We will recess at this time until 1:30.

(Whereupon, at 12:25 o'clock p. m., a recess was taken until 1:30 o'clock p. m.)

AFTER RECESS

(The hearing was resumed at 1:30 o'clock p. m., pursuant to recess.)

EXAMINER SPENCER: The hearing is resumed. Are you prepared to proceed, Mr. McAllister?

MR. McALLISTER: Just one moment, Mr. Examiner. The time was so short at recess I had no time to go over my notes.

EXAMINER SPENCER: Very well.

Whereupon

J. H. LYTLE,

the witness on the stand at the time of recess, resumed the stand and testified further as follows:

Cross Examination

BY MR. McALLISTER:

Q. Mr. Lytle, in response to a question by Mr. Paxson you stated on December 27, 1937 you reached your annual peak load?

A. Yes.

Q. You also stated,—

A. (Interposing) Peak on the system.

Q. Is there any difference?

A. No, except for a little slop-over there I found later. I explained that to Mr. Paxson.

Q. Will you explain that now? I don't recall that. If there was a difference in the peak on the generating system,—

A. (Interposing) The generating station was 31,600.

Q. 31,700.

A. 31,700, that is right. Later on I looked at the charts we had of Atlantic Substation showing the flow into the interconnection and I found that 200 had gone toward Public Service. I can't tell you how many. I am not sure about our records of that, but for that hour, 6 and 7, there was a balance of a few hundred going into the Public Service System. So, our own System would be a little less, but the Livingston Station was the figure I gave to Mr. Paxson.

Q. That was the energy developed during that hour at Livingston plant?

A. At the Livingston plant, yes.

Q. I believe you said also that was average for the hour?

A. It was in there, according to the kilowatt hours, for one hour.

Q. What is the maximum and minimum during that hour?

A. The maximum, as I remember, was 32,500. It flashed up to 32,500. It surged up that way. That was the highest reading. The reason I remember that our reports show it. I don't remember the minimum.

Q. And that was between 6 and 7 p. m. on that date?

A. Between 6 p. m. and 7 p. m. on December 27th.

Q. 1937?

A. 1937; yes, sir.

Q. And I believe also in response to a question by Mr. Paxson you stated the load at that time was being carried by two 15,000 kilowatt generators?

A. Yes.

Q. Did you have any other capacity on the line at that time?

A. No, sir; no other generating capacity; no, sir.

Q. No other generating capacity on the line?

A. No, sir.

Q. Supposing one of those generators had failed during that period, from what source would you have supplied the period of the peak load that was theretofore carried by the generator which is assumed to have failed?

A. We would have carried what we had to carry, what we needed from Public Service through that interconnection.

Q. Just what would occur upon such a failure? What would be the series of events that would occur if one of those generators failed during that time?

A. The generators have a differential relay operation so that an internal fault or stepped-up transformer would cause the differential relays to operate automatically taking the machine off the bus.

Q. Taking the machine off the bus?

A. Yes, sir.

Q. What would be the next thing that would occur upon your system?

A. Well—

Q. (Interposing) Automatically what would occur in the natural course of events under those circumstances?

A. Automatically emergency power would begin to flow in from Public Service. We would immediately get started on the other two machines and bring them up, but the first thing that would happen the power would automatically flow into Staten Island through that interconnection. That is what it is for.

Q. That is what it is for and you rely on it for that purpose?

A. We rely on it for emergencies.

Q. For that purpose I just mentioned?

Would you rely on it for conditions such as I have described?

A. We would rely on it for emergencies.

Q. Don't argue, can you answer the question?

A. Will you repeat the question?

Q. I say during the time you are carrying your peak load on the date which you specified and the period which you named, you said you have two 15,000 generators on the line carrying that load of 37,500 kilowatts, and I said if one of those generators would fail what would occur. Your answer was you would immediately begin taking energy to supply the sufficiency through the connection with Public Service, and I said it is a fact that under the circumstances you rely upon this connection for—

A. (Interposing) Yes, because that is an emergency.

Q. You rely upon this connection with Public Service?

A. Yes, that is an emergency.

Q. There is every reliance there. You would not be attempting to operate, would you, a load of 31,700 with two 15,000 generators and no other machine on the line if you didn't have this connection?

A. We would not, that is right.

Q. That would not be a good operation?

A. No, sir.

Q. Would it?

A. Not with 31,000 on there and those two machines would not be good operation.

Q. Now suppose you have a load of 27 or 28 thousand kilowatts, would it be good operation with two 15,000 units operating and no other units on the line, would it be good operation to attempt to carry that load with two units without such an interconnection?

A. No.

Q. Without such a connection and two units on the line would you handle anything above 20,000 without such a connection?

A. No, not above 20,000.

Q. You would not, in good operating practice, attempt to carry a load which would be in excess of the capacity of either of those generators without a connection, would you?

A. Not in excess of a maximum capacity.

Q. Of one of those generators?

A. Of one of those generators. I don't mean the rated capacity. I mean 15,000—

Q. (Interposing) To get right down to a basic figure, what would that be?

A. About 20,000.

Q. You can get 20,000 out of one of those generators that is rated as 15,000?

A. We have done so.

Q. Over what period of time?

A. On checking just to determine what we can do I would say roughly 10 or 15 minutes. However, we took readings of our generator and transformer temperatures and those readings indicated we could carry that load half an hour to an hour. In that situation it would give us time to get the other started. Is that clear?

Q. That is clear as far as I am concerned.

Would you attempt such operation except in an extreme emergency?

A. Let me get this straight, your question.

Q. I mean when you are relying upon that unit to generate 20,000 kilowatts over a period of an hour, your peak load depends upon that one unit?

A. No, we would not go quite to 20,000.

Q. You would not want to ask your customers to rely upon anything as uncertain as that?

A. No.

Q. How about the generator, would you want to ask your company to hazard the damage that might occur to that generator under those conditions?

A. I told you we feel certain, based on actual tests, during which readings were taken, that it would carry the 20,000 long enough to get additional capacity on the bus.

Q. Would that be safe operation? In other words would you rely upon that one unit, eliminate this connection, depending upon your ability to get one of the other generating units rolling as a general layout of operation plans, would you do that?

A. Up to 20,000 can do it, because we can get other capacity on the line in half an hour to an hour and it will carry 20,000 that length of time.

Q. You are willing as an operating man, considering the service to the public and the good of your company to operate under those conditions whereby you might be called

upon to load that generator up to 20,000 kilowatts for a period of half an hour to an hour?

A. I would not operate that close.

Q. You would not operate that close?

A. No, sir.

Q. What I am trying to get at, how close would you operate?

A. About 17,000.

Q. About 17,000 would be the only safe margin you would have?

A. No, I didn't say only safe margin.

Q. As a practical operating plan?

A. There is such a thing as being safe and plenty safe.

Q. What is this?

A. I would not be afraid to bring it up to 20,000. I am directing men and I am going to allow for human errors and mistakes. You can say 20,000 for a turbine. You can say a man can do something in 10 minutes but maybe the man will get excited. I am just playing a little safer.

Q. Let's say 17,000 would be the safe plan.

A. That is an arbitrary figure set by myself.

Q. Is that your judgment of what you could rely on?

A. I would say that is what we have been doing.

Q. That is what you have been doing?

A. About that.

Q. What was the power factor in 1937 at the peak load?

A. About 83 or 84 per cent, something on that order, but I can't tell you that exactly.

Q. With that power factor the rated capacity then would be just about all you could get out of this generator?

A. At that 15,000?

Q. Yes.

A. No.

Q. How much more?

A. I told you 20,000 for a short period.

Q. With that power factor?

A. With that power factor.

Q. What was the power factor?

A. About 83 or 84 per cent.

Q. The economy energy and incidental flow that you talk about is all the same energy so far as its ability to serve a customer is concerned, isn't it?

A. No, there is a distinction there.

Q. Let us get the question straight. It comes on your line. You dispose of it to your customers in exactly the same manner you would emergency power or any other power on your line.

A. Power on the line goes to the customers of course.

Q. That is all I asked.

A. But there is a distinction between its ability to serve a customer. To serve a customer you have to have reliable power, power you can depend on. Economic flow is not entirely reliable. It can be cut off any time, slop-over or incidental, you know what I am talking about?

Q. Yes.

A. That doesn't stay on the line. We hardly have any control over that.

Q. And what comes over to you, you use?

A. Yes, sir.

Q. If you want to return to the other company the amount which you have received and used in that fashion you have to generate it and send it back?

A. Yes, sir.

Q. That is true?

A. Yes, sir.

Q. And they use it in their System?

A. I conclude they do, but I don't know.

Q. What would you do with it?

A. I don't know how much would be consumed in

losses.

Q. They might use the power for their losses?

A. I don't know.

Q. Is that the way you measure your losses, charged against the slop-over?

A. No, sir.

Q. Do you think a general operating system such as Public Service would charge that against losses?

A. I don't think so. I am only giving you an opinion, not a fact.

Q. As a matter of fact, you don't think they ever have any intention or ever do measure their losses by slop-over energy?

A. I don't know how they measure their losses.

Q. As a good operating company, would they do it?

A. I don't know how they measure their losses.

Q. Would a good operating company measure their losses that way?

A. No, I would not think so.

Q. You know the Public Service is a good operating company, isn't it?

A. A very good operating company.

Q. Then you assume they would not measure their losses against that kind of flow?

A. No.

Q. Under those conditions which you have related, Mr. Lytle, the dependence you have upon this connection is a safeguard against the failure of one of your generating units?

A. Yes, sir.

Q. It occupies the same relation to your System as if you had spinning on your line the reserve capacity to take care of such an emergency?

A. It acts the same as spinning capacity would act, yes. Very much the same.

Q. And for safe operation must be as dependable as

spinning reserve?

A. It isn't as dependable as spinning reserve, no. I think any operating man will agree with me in that. I think spinning reserve would be considerably more reliable.

Q. Due to the fact that you have it under your control whereas with your connection you are relying on somebody else?

A. Yes.

Q. It is like having a spare automobile in your own garage and relying upon somebody under contract to furnish you a car when yours breaks down?

A. Not exactly. Turbines, I would consider somewhat more reliable than lines.

Q. Then generating capacity located adjacent to an interconnection would make that interconnection more dependable than an interconnection that was at some distance from the generating capacity, isn't that true?

A. Oh, somewhat, yes.

Q. On the same relation you just mentioned the spinning turbine on your own line is to be preferred over an interconnection because you are in close proximity. I say, with respect to an interconnection that is close at hand, a reserve generating capacity is more desirable, can be relied upon to a greater extent than an interconnection that is at some distance from the generator.

A. Yes. You have to consider the type of plant and line,—

Q. Well—

MR. PAXSON: (Interposing) Let him explain.

BY MR. McALLISTER:

Q. Answer that first.

A. A good plant and good lines are better than a poor plant no matter where located,—

Q. (Interposing) Naturally.

A. A good plant where you need it is better than a poor plant, I will admit that, sure.

Q. Assume we have got good lines and a good plant adjacent within a couple miles from an interconnection, is that more dependable than an interconnection so far as you would be concerned than an interconnection with good transmission lines and a good generating plant which is located 15 or 20 miles distant?

A. It would be somewhat more reliable, yes.

Q. What would you say of the dependability of the interconnection between Mechanic Street Substation and your Atlantic Substation?

A. Between Mechanic Street Substation and Atlantic Substation?

Q. Yes, the dependability of those lines.

A. The dependability in the past has been excellent.

Q. You know the character of those lines, do you?

A. Between Mechanic Street and our Substation?

Q. Yes.

A. I know the character of them, yes. It has been quite good. We have had some cable failures and so on, but on the whole I would say it is pretty good.

Q. Is it just pretty good, or has it been what you would expect under any and all circumstances for a connection of that kind? Is there any inherent defect in the design of that connection?

A. No inherent defect in the design I know of.

Q. How would you improve it? What ought to be done to make that a real dependable connection?

A. Put new equipment in, that is about all I can say.

Q. In other words, all that is in there is wear and tear, that is being in the service for a long period of years?

A. Yes, sir.

Q. Now when was it put in?

A. 1925.

Q. 1925?

A. Yes.

Q. Has any part been replaced?

A. Sections of cable have been replaced. Where there has been a cable failure they sometimes have to cut in a new piece of cable. In that way it would be better than the old cable. My answer is largely—

Q. (Interposing) You don't mean to say this is not a dependable connection?

A. I don't mean to say this is not a dependable connection?

Q. Yes.

A. It has always taken care of us in emergencies which we have had.

Q. You would not say it is a dependable connection?

A. I am not going to the extent of saying it is perfect.

Q. I didn't ask you this. I asked you if this was a dependable connection?

A. Quite dependable.

Q. How about these lines from Atlantic Station to the Livingston generating plant, are they more dependable than those lines over to Mechanic Street?

A. Are they more dependable?

Q. More dependable, yes. You seem to have some doubt about that connection. I want to find out what you think about it with respect to Livingston.

A. I believe they are more dependable, yes.

Q. You mean from Atlantic to Livingston your lines are more dependable?

A. That is my belief, yes.

Q. Tell us why?

A. Principally because they are overhead lines that have shown very little depreciation, whereas with cables I am not sure.

Q. How about this underground cable you referred to, I think at St. George?

A. That underground cable is newer than any connection.

Q. Just because of the age, that would be your reason for saying it is more dependable?

A. Not altogether on account of age. The art of making cable has been improved. The cable you would buy today may be better than one bought five years ago. There may be an improvement in it over one five years ago. It is not all due to depreciation, you understand what I mean.

Q. I understand.

A. Due to improvement in the art.

Q. You know the type of cable underground there?

A. Yes, sir.

Q. To make the Mechanic Street connection?

A. Yes, sir.

Q. Now, what improvement has been made in the manufacture of the underground cable which you have compared with that one?

A. Well, the improvement of the design in our cable, the cable running from Livingston to St. George, that is what you mean, isn't it?

Q. Yes.

A. It is a different type. It is type H, the letter H, which means licensed under the Hostetter Patents.

Q. You can't compare the two. One is a submarine cable and the other lies in conduits.

A. That is true, but there is not such a vast difference. That is true, one is under water, but on our side a certain length is in conduit from the water edge to the substation and on the Jersey side the same is true.

Q. The dependability of your line is important in the art of manufacture of that submarine cable?

A. I would say so.

Q. I didn't complete my sentence. The art of manufacturing cable which you have installed up around St.

George as compared with the cable that lies under the Killvan Kull—

A. (Interposing) I think that cable we have between Livingston and St. George is better cable. I do.

Q. What is the distance between your Atlantic Substation and the Mechanic Street Substation?

A. It is about 7,500 feet. I am giving you these figures out of my head. I don't want to be held right down to the foot, about 7,500 feet.

Q. What is the distance from the Atlantic Substation down to the water edge? There would be a difference at high and low tide.

A. There is about 3,800 feet from Mechanic Street to water edge. It is about 2,000 feet under water. It is about 1,600 feet from the water edge to Atlantic Substation. Those figures are the best I can remember.

Q. That is all right.

A. They are pretty close.

Q. What is the capacity of the circuits from Mechanic Street Substation to your Atlantic Substation?

A. I would say 13,000 or 14,000 KVA, or something in that area, continuous load each.

Q. Has there been a time when both of those cables have been out of service?

A. Yes, sir.

Q. They have been both out at the same time?

A. There have been times when both cables were out of service at the same time.

Q. When was that, Mr. Lytle, and how often?

A. I don't know whether I have any data on it or not. Let me see. I remember in 1937, in the spring of 1937 those cables, I think, were out about a week. Both out at the same time for about a week. I don't like to evade anything, but it is hard to remember.

Q. That is all right. During the time those cables

were out how did you assure yourself against the emergency?

A. By running more machines.

Q. In other words you put the reserve capacity you might be required to throw on the line at any time, you kept that hot or spinning on the line, so to speak?

A. That is true. The interchange was available for emergencies. When it wasn't available we did something else about it.

Q. If there should happen to be a failure of the cable at the time you were called upon to use it to maintain a load that had only one reserve, it would be one of those cases where it would be too bad, isn't that right?

A. Yes, sir.

Q. In other words there would be a failure until you could get your cold reserve on the line and operating?

A. That is true. We can't guarantee perfection in anything.

Q. That is right.

A. We do the best we can.

Q. We had some discussion this morning about this incidental flow, slop-over and what-not, as it has been called. I think you stated you had no need for it and didn't want it and would not have anything to do with it if you could prevent it, isn't that so?

A. I stated that, yes.

Q. There is one way to prevent it, isn't there, and that by opening the switch?

A. Sacrificing service to our customers.

Q. Just tell me how you would sacrifice good service to your customers by opening the switch, the emergency connection to Mechanic Street?

A. If we were running normally we would have the capacity on that carries our load—

Q. (Interposing) Right.

A. And we have an accident or emergency, something happens.

Q. All right.

A. Now we have a number of customers to whom a momentary interruption, I mean less than a second, to whom a momentary interruption is very serious. I want to illustrate that. We have a number of large factories with a great many motors and some of the motors are equipped with a no-voltage release device, so when the electricity goes off they take that motor off the line almost instantaneously, very quickly.

Suppose the switch were open on the interconnection, the generator fails, the line fails, they would get a momentary interruption and a momentary interruption to you reading is of no significance. Those lights could go down and it would not bother us.

Q. No.

A. In those factories and mills all the motors, not all, but a lot of the motors have to be started in sequence. I can't go into detail of the customers, just what they are. I do know it is very serious to them and an interruption of our service only a second would cost them an hour or a half hour. Often material is damaged in process and it costs them distinct money losses and distinct labor losses.

I have gotten more complaints from customers, more criticisms, on that one thing than any other. That is why we keep it in all the time and that is why it is much better than to operate with that switch and put up with that incidental power. We don't like it. It is no good to us.

Q. That connection is vital to your satisfactory operation, taking into consideration—

A. (Interposing) No, it is not vital to our satisfactory operation. If we didn't have the intereonnection we would have more generators on. I could not say it is vital. It isn't. We have enough capacity to replace our biggest unit.

Q. That is true.

A. I can't say it is vital. It is a help.

Q. What I mean to say is this. When you retain at cold standby the 10,000 and 6,000 kilowatt generators, at that time it is vital to your operation?

A. It is very important to our operation.

Q. It is vital, isn't it from what you have just described? It is vital to the supply of the kind of service you do.

A. I don't like—pardon me, I am sorry.

Q. It is vital through your operation by which you say you undertake to supply to your customers—

A. (Interposing) I don't like to use that word vital. Vital means a matter of life and death to the company. It is not. It would be a serious interruption. To that extent the connection is very important. It is not vital.

Q. We won't quibble over the definition of a word.

A. I don't like to quibble, Mr. McAllister. I don't like it.

EXAMINER SPENCER: All right, proceed with your examination.

BY MR. McALLISTER:

Q. It would be a matter of serious consequence from the standpoint of good operation?

A. Yes.

Q. Put it that way. Isn't that true?

A. That is true.

Q. Now when you maintain an interconnection of this kind with another System, and that flow of energy comes to you at various times, I said that flow of energy, I mean there is a flow of energy to you at various times from the other System with which you are connected. You say that you undertake to eliminate that condition immediately?

A. Yes, I did say that. That is the instructions the men have.

Q. Now how long does it take to eliminate that flow to your System?

A. I will answer that by telling you what they do. The man who has charge of the System operation has a watt meter before him.

Q. Let us place that man. Where is he?

A. He is at the St. George Substation. He controls the System. He has a watt meter connected to the interconnection. It doesn't measure anything else. It is on separate wires. That is before him all the time. It reads two ways, power flowing out from Staten Island Edison or flowing into Staten Island Edison. When he sees that move either way he immediately calls the power house, the switchboard attendant at the power house at Livingston on a private line, a line that is connected at all times, and tells him to pick up so much load or drop so much load. They generally do it on account of the size of the meter in blocks of 500. Actually he doesn't call up. They have worked out a system of rings, two rings to drop 500, like that, they don't even have to telephone. I never have timed it. The instructions are followed promptly and it will take the time it takes for the men to do it. It is not complicated.

Q. What happens at the generating plant when they get the instructions?

A. The man himself who gets the signal can adjust the governor on the turbine.

Q. How long does that take?

A. A few seconds.

Q. What does the generator do?

A. Either takes on more load or drops more load.

Q. Does the generator operate instantaneously?

A. Nothing mechanical operates instantaneously. It operates in a couple of seconds. The governing mechanism is driven by an electric motor. It would take a few seconds.

Q. The reason you go through these various steps

is to try to balance the load on your System with what you are generating, isn't that correct?

A. The reason is to reduce to a practical minimum what is slopped over.

Q. What has been coming over this interconnection?

A. They have instructions, I tell them to keep that indicator on zero.

Q. As a matter of fact, is there anything you can do at that interconnection to stop that flow except opening the switch?

A. That is all.

Q. What you try to do is balance the quantity of electricity generated, balance the quantity of electrical energy you are generating against the load you are carrying and, if you can do that, to a certain extent you are balancing the flow of energy over the interconnection?

A. We are trying to keep that incidental flow at zero. That is what we are trying to do.

Q. That is the end that you are trying to attain. To attain that end what means do you take? You have given the physical process, but in the last analysis what you have done is to try to balance your load against generation, isn't it? I include in the load all losses and everything on the system.

A. Trying to balance what?

Q. Your load.

A. Trying to balance what?

Q. Your load with your generation.

A. Oh, yes, to keep our load all on our own plant.

Q. That is balancing the load.

A. I suppose you would use that term.

Q. What would you call it?

A. I would say carry our own load.

Q. Carry your own load?

A. Yes, sir.

Q. But supposing as you do balance or about the

time you are undertaking to balance it there is a further load of a thousand kilowatts coming on your line, where does that load go?

A. Where does it go?

Q. Who carries that load at the time it comes on?

A. Suppose it is a load on the Atlantic Substation—

Q. (Interposing) Now,—

A. (Interposing) May I finish?

MR. PAXSON: I was wondering if you were going to let him answer.

MR. McALLISTER: I am going to let him answer. I was wondering whether I would add something to the question or not.

MR. PAXSON: All right, I see.

THE WITNESS: The same routine would be repeated. He gives the signal and you say some load comes on?

MR. McALLISTER: Yes.

THE WITNESS: And then he would give—

BY MR. McALLISTER:

Q. (Interposing) There is an inflow over the connection.

A. That is right.

Q. Caused by the flow coming on the line?

A. That is right.

Q. It naturally would divide in some proportion between your Livingston plant and the Mechanic Street?

A. Probably would unless there is a corresponding change in the other System, the Public Service System. There could be a counter-balance by the time a load came on some place, it would tend to cancel the other. It is unpredictable, you can't do anything.

Q. If the two loads came on instantaneously, that is true?

A. Yes, sir.

Q. If there was a difference between the two it would reflect itself and rectify itself afterwards, isn't that right?

A. Yes, that is right.

Q. A load of 1,000 kilowatts coming onto a line at a time is fairly sizeable load, isn't it?

A. I look at this relatively. A thousand kilowatts on Public Service is very small. A thousand kilowatts on us is somewhat larger. I would not say a thousand kilowatts is something you would call large. Our peak load is 31,000, 1/30 of the peak, it is not a tremendous load.

Q. It would be about 5 per cent of your load. It would be appreciable on the line.

A. It would be noticed at the plant and the substation.

Q. And it would be enough to throw out this balance over the interconnection if it was being maintained?

A. It would be thrown out of balance and would be indicated immediately and corrected, as I told you.

Q. Are there any times, Mr. Lytle, when this incidental flow continues over a period of five or ten minutes, coming to your line?

A. It might, for this reason, that we have at times, for instance there have been times when this meter equipment was out of order and times like that it could occur.

Q. It might flow for several hours, might it not?

A. No, not likely several hours because when anything like that happens Public Service gives us a ring.

Q. Suppose during one period you had accumulated, because in the manner in which you operated you accumulated a flow of energy to Public Service, and to balance out, might you not take that energy continuously for a period of time to offset what had flowed in the opposite direction?

A. Well, yes, we might. We might. But the out-of-balance doesn't become very great and can be spread over some time. I just can't tell you the exact amount of time we have done it in the past. We have never considered it amounted to very much, the whole problem of incidental flow.

Q. What would be the total kilowatt hours flowing in both directions over the course of 24 hours?

A. Kilowatt hours, I have the yearly figure. You will have to reduce it. It is in the neighborhood of three million a year.

Q. Some days are high and some are low?

A. The days balance out pretty well on the incidental. However, I haven't it in mind. I can't remember figures from day to day.

Q. No.

A. I will tell you this—

Q. (Interposing) Go right ahead.

A. As far as I know they keep it pretty well in balance all the time.

Q. Of course the records will show from day to day how this was?

A. Yes, sir.

Q. I show you a statement which is Exhibit No. 19 in the record supplied by the Public Service Electric and Gas Company and call your attention to reading on July 12th, and ask you if that doesn't show that for that day there was a very considerable quantity of energy moved from Staten Island to Public Service in excess of the quantity which was delivered in the reverse direction?

MR. PAXSON: What date was that?

MR. McALLISTER: I think July 12th.

THE WITNESS: You told me the 12th. That is true.

BY MR. McALLISTER:

Q. That shows, does it not, that the quantity moving to Public Service from Staten Island was 6,000 kilowatt hours and the quantity of energy moving to Staten Island from Public Service was 15,000?

A. That is true.

Q. Or a difference of 9,000 kilowatt hours?

A. That is true.

Q. During a day such as that there would be a rather marked flow of energy to your lines, would there not?

A. That day there would be a difference of 6,000 over the 24 hours.

Q. 9,000?

A. The 14th, isn't it?

Q. No, the 12th.

A. The 12th?

Q. Really, what I had in mind was July 13th.

A. I will take either one. It would be 9,000 over 24 hours.

Q. It would be 9,000 over 24 hours?

A. Yes.

Q. That is if we assumed it all flowed during the 24 hours, but we have got to permit some time for this 6,000 to flow in the opposite direction, so what we have here is 15,000 flowing over the 24 hours if we assume it is evenly divided?

A. Yes, that is all right, roughly.

Q. That seems all right roughly?

A. Yes, sir.

Q. There is a marked difference in the flow as compared to balancing it out in the matter of a few minutes.

A. Yes, you will find the differences when the men fell down on the job, that is true. I wish to add this, it wasn't intentional.

Q. But that is not an unusual occurrence, is it?

A. Well,—

Q. (Interposing) I mean looking at the report, which is Exhibit 19, it shows there are many days when a like situation prevails. Take the 12th and the 11th of the same month, July, 1937.

A. It may be explained. I am saying it may be explained by the fact our recording instruments were out. We have trouble occasionally with the instruments being out of order. Understand, there are about 15 miles of controlled cable between Atlantic and the watt meter at St. George, and occasionally it will be out of order, and out for a couple of days. During those times we haven't control. Usually Public Service calls and tells us, but there is not nearly as accurate a way of operating it as when we have that meter and circuit in operation.

Q. The records of course indicate what the operation has been?

A. Yes, sir.

Q. Over that period of time?

A. Yes, sir.

Q. Can Public Service, through their operation on Mechanic Street also control this flow as you do?

A. Not at Mechanic Street; no, sir. The only thing they can do at Mechanic Street, I believe, is to open the breaker.

Q. Open the breaker?

A. Yes, at Mechanic Street, yes.

Q. That would be the only control they have over that flow?

A. They have no control that I know of over there.

Q. Why is it, Mr. Lytle, Public Service can not control that flow of power at Mechanic Street?

A. Because they have no equipment there with which to do it.

Q. If they were operating a generating plant at that point they could, and carrying the load in that vicinity to a certain extent it would balance out on their line so

that it would eliminate the flow across there.

A. If they were operating a generating plant at Mechanic Street tied in interconnection with the rest of their large System it would be very difficult for them to do. They would have to change too much else. Our plant is the point where it is most easily controlled. I think that is technically correct. We have almost complete control.

Q. As a matter of fact speed and frequency is controlled by connection with Public Service.

A. Our frequency is controlled by connection with Public Service, that is true.

Q. And you operate in parallel with them?

A. That is true.

Q. This balancing out we have been talking about, which is accomplished by your control of your generating station is not in fact a control of the energy that passes backward and forward over this interconnection as such.

Let me make myself clear. What you attempt to do is to—as you put it—carry your own load, and if you do that exactly there isn't any slop-over of energy, as you call it of Public Service and Staten Island of any importance, isn't that true?

A. What we actually do is to try to keep the inflow of energy flowing over there at zero.

Q. But that is accomplished, as I say, through your placing on your generating plant all the load on your line as near as may be?

A. I would say it works the other way. We know when there is any incidental or slop-over. We are carrying our load and our load only and what we attempt to do with our facilities is to keep that inflow at zero.

Q. When it comes to a time when there is a change in that load on your line, let's assume that you are attempting to eliminate it as nearly as you can, you have no control of the energy that comes across from Mechanic Street.

You can't put a sieve there and catch it and throw it back.

A. No.

Q. It is going to flow in there and become part of the energy of your line.

A. Until we correct it.

Q. Until you correct it?

A. Yes, sir.

Q. Now if the energy that is on the bus at Mechanic Street is energy that has been generated on their System, this constitutes the energy that will flow onto your line?

A. All I know is we are connected at Mechanic Street.

Q. I am asking you as an electrical engineer, you can only get off that bus the energy that is on it through your connection?

A. Of course it is true we can't get energy except off that bus.

Q. And if that energy is generated by the plant of Public Service Electric and Gas Company then, that is the source of power coming to you?

A. If the energy on that section of the bus with which we are connected is generated by Public Service, yes.

Q. Likewise, if it is energy generated by Jersey Central Power & Light Company then, that is the energy that comes to you?

A. The energy coming into that section of the bus to which we are connected, that is the energy which we get. I mentioned the section, that bus can be sectionalized in different ways.

Q. What do you mean by sectionalized?

A. Parts of the bus can be disconnected from other parts.

Q. How would that be accomplished ordinarily?

A. By switches, either oil switches or airbreak switches. It can be accomplished by both.

Q. You mean the opening of a switch on the bus in

the same manner in which you might open a switch on an interconnection that of course will sectionalize the bus the same as opening the switch on the transmission line to sectionalize the line?

A. That is correct.

Q. That is what you had in mind?

A. That is what I had in mind.

Q. You went into some detail this morning, Mr. Lytle. Explain that economy flow energy which you obtained from Public Service was priced on some formula related to the cost of generating by Public Service in relation to the least efficient generating unit which they had at the time on the line, isn't that true?

A. I don't think I described any formula. I said that the prices they would quote us for economy flow energy was the price it cost them to generate it. I think I said on the last unit they put in, which was probably the least efficient unit. That is my understanding of what I said this morning.

Q. That would be a correct statement according to your understanding as to how the price is determined for this energy?

A. That is right.

Q. You are not to be understood as saying that it is that energy that you get, but merely the means of determining the price of whatever comes to you, isn't that true?

A. That is true, I think. I would not attempt to say where it came from.

Q. I don't think it is part of the understanding, as you understand it, that the determination of the price in that manner is to be taken?

A. In other words negotiations we have, I mean personal negotiations where we get power from Public Service Electric and Gas, it is at their price, and I don't know anything more than that—

Q. (interposing) Let us put it this way so we

won't have any question on this record here.

If you were selling in an interconnected utility under the same circumstances, under the same kind of agreement, whereby the price which you would charge for energy delivered was to be determined by the cost in connection with the lowest unit that you put on the line, would you have any understanding that what you were selling was the product of that generator any more than the product of other generators on the line?

A. No, I would not.

Q. It is merely the means of determining the price for the sale of this energy. Because, in reality it is assumed when you are delivering energy at a time when you have a less efficient unit or machine, by increasing the operation of that unit, that is the cost now of supplying the excess energy you are trying to deliver?

A. I think that is true.

Q. Relatively speaking?

A. Yes, sir.

MR. PAXSON: Let him finish.

THE WITNESS: We dealt with Public Service. Nobody else was mentioned. No other plant other than theirs was mentioned that I know of. It wasn't up to me to investigate where any particular kilowatt was coming from. I didn't. I didn't know which plant they were coming from. All I knew, I had the understanding that we were getting power from Public Service Gas and Electric Company, which was getting power from somebody else. I don't know what their arrangements are. They didn't at any time mention anybody else and as far as I know it has no bearing on the price quoted. All I know you can ask a lot of hypothetical questions under certain conditions, all I know we are dealing with Public Service. I never have delved into it.

Q. What I am asking you is this, and I think it can

be simply answered, if you will just answer the question.

Let us relate it to the actual happening when you buy energy from Public Service, economy flow, as you have termed it, and it is supplied to you and you say the price is determined on the basis of the cost to them of generating that energy through the unit last placed upon the line, or if that isn't exactly right, by the least efficient unit on the line.

I asked you if it was your understanding that that was the energy to be delivered as economy flow or if that was merely a means of determining the price to be charged for a different energy?

A. I didn't understand that the energy would come from that particular generator.

Q. It is a means for determining the price?

A. It is a means for determining the price. I do not know from what generator it comes.

Q. That is the reasonable means between companies for determining a fair price?

A. It is a reasonable means of determining the price, yes.

Q. For that kind of energy?

A. Yes, sir.

Q. Mr. Lytle, do you supply any emergency energy to Public Service?

A. We haven't. I don't remember. We haven't in the last several years. I remember that. I would not say we never did. I would not remember whether we ever did.

Q. Do you supply any economy flow energy?

A. Not in recent years, no.

EXAMINER SPENCER: Let us take a recess for ten minutes.

(Whereupon a short recess was taken, at the conclusion of which the following occurred):

EXAMINER SPENCER: You may proceed, Mr. McAllister.

BY MR. McALLISTER:

Q. Mr. Lytle, we may have covered this, although I do not recall definitely. I think I asked you whether you had supplied any emergency power to Public Service Electric and Gas Company at any time during 1937 and 1938?

A. No, sir.

Q. Have you supplied any of what you might call economy flow during that period?

A. No, sir; not that I remember of. I have no recollection of it at all.

Q. Do you know whether or not it is true that they relied upon energy which they received from you to the extent of 2,000 kilowatts in carrying their system load peak during the year 1937?

A. You mean 2,000 listed as incidental or slopover?

Q. I am not giving it any name, but 2,000 kilowatts supplied by your company to enable them to carry their system peak?

A. I have no recollection of supplying any power whatsoever for them to carry their load in 1937 at all. I have no recollection of it. If they did, they should have declared an emergency and we would have billed them for that power as emergency power. I have no recollection of having done that.

Q. If during a period of time on that day or the day before you had received an excess of energy from them, let us say, and during the ensuing period you were delivering back to them 2,000 kilowatts and it happened that while you were delivering to them that amount that they met their annual system peak, they might utilize that 2,000 kilowatts in carrying that load to meet that peak?

A. If they needed anything that we sent to them it was their duty to us to declare an emergency. I have no recollection of any emergency on their part. If they

received it and had to have it to carry any part of their load, that constituted an emergency. We try to be very careful and report everything, as you can see by the record—one minute, two minutes—and it is up to them to do the same thing. They never did it in 1937. At least, I have no recollection of their having done it in 1937.

Q. Let us put it in another way. I do not have the figures before me, but let us suppose they had 40,000 capacity on their line and they were generating 30,000, they were receiving from their interconnections another 30,000, and incidentally they were getting 2,000 from you: and let us assume that 62,000 was their annual peak. Of course, that peak is not their annual peak. But with 2,000 kilowatts that you supplied to them, that 2,000 kilowatts was available to them in carrying their peak at that time?

A. It was available to them. I don't think that ever occurred. They never notified us. It was then emergency power, if they needed it.

Q. You recall in my question that I said they had a capacity on the line for 40,000, but they were only generating 30,000. So you would not go up to the question of emergency, would you?

A. I am trying to say that they never declared an emergency. They never declared an emergency, which meant that they needed that power from us, that incidental power or whatever it was that was going across. They never needed it because they never declared an emergency.

Q. But just listen to the question, Mr. Lytle. You are actually sending them 2,000 kilowatts, not undertaking to say why you are sending it over there. It may be as I intimated, the result of a flow in the opposite direction on that day or on some other day and you are balancing out. But to the extent that you do send them 2,000 kilowatts and it extends over a period of an hour—2,000 kilowatts—they can use that to meet their peak just

as well as they can use power which they would generate on their own lines?

A. That is possible. The 2,000 seems pretty strong to me to ever try to adjust something. That is a load of 2,000. Our operators ought not send 2,000 at a time. However, they could use it if we sent it.

Q. They could use it if you sent it over there?

A. Yes.

Q. Or they could sell it? Or they could keep that much capacity off of their line?

A. We send it over there, and then I have no more control over it after I send it over there.

Q. And they send it out wherever the load is to carry the load that is on their system at that time?

A. That is possible.

Q. In the reverse direction when you get a like quantity that comes over to your line you likewise use that in supplying the load that is on your line during the time that it is coming to you?

A. That is true. It will come into our system to supply load and losses. However, we stop it right away.

Q. How is that?

A. We stop that flow right away unless we are on economy flow or on emergency.

Q. I don't think the records I showed you a little while ago bear that out. I am going to show you that again and ask you how you explain this very great difference on some days, a difference of as much as 9,000 kilowatt hours. That means continuous flow. It is a difference of 9,000. As a matter of fact, there are 15,000 shown for July 13, 1937 coming to your company, that is, 15,000 kilowatt hours, and there is a flow in the reverse direction of 6,000 kilowatt hours. Now, I am asking you, Mr. Lytle, does it appear to you as though there was a balancing out during that time?

A. There wasn't a balancing out during that time;

I don't think.

Q. There couldn't be, could there?

A. They do not balance. The readings you gave me do not balance.

Q. I am directing your attention also to the 12th, the day preceding, in the month of July, 1937. Will you give the figures for that date?

A. This is July 12, 1937?

Q. That is right.

A. SIEC to PS 5,000; PS to SIEC, 12,000.

Q. That does not indicate a balancing out either, does it?

A. No, sir; it does not.

Q. I am not making a particular point of the date or the time or anything else; but it does show you do not balance out from minute to minute, as a matter of fact?

A. We do not always. We cannot always do it. In operation and in carrying on a system accidents will happen. It may have been a day when the metering equipment was out of order.

Q. Let us look through each month and see if that condition does not persist during each month. Let's come down here to the 15th of August, 1937.

A. That is right.

Q. There also you sent to Public Service Electric and Gas Company 7,000 kilowatts and you received from them 12,000 kilowatts?

A. Yes; that is right.

Q. And as you look down here through all of the dates through all of these months doesn't it appear that it is the exception rather than the rule that there is a balancing out during the day?

A. I will not admit that it is the exception; no, sir. There are a lot of days here that are just about equal. There are a great many days that are just about equal.

Q. Just about?

A. Yes.

Q. Take this right down here (indicating).

MR. PAXSON: What is it? What date is it?

THE WITNESS: It is August, 1937, beginning with the first.

BY MR. McALLISTER:

Q. The first few days do balance out, down to the 7th. Is that right?

A. They balance just about exactly. It is the 8th.

Q. Including the 7th.

A. The 8th too.

Q. 8th and 9th?

A. 8th and 9th.

Q. That is balancing, isn't it?

A. It is not a perfect balance. It is very close.

Q. From there on to the end of the month there is more out of balance than there are in balance?

A. Well, let's count them. Unless you expect a perfect balance, there are, yes. But there are some of them that are very close. A great many of them are very close—7th and 9th, 7th and 8th.

Q. Read the others. There are 11 and 7?

A. Suppose I read all of them.

Q. We have the exhibit in the record. This is an exhibit in the record.

A. It is not a perfect balance. I did not intend to try to claim that.

Q. I merely wanted to have you realize and so state for the record that this is not a balance maintained from minute to minute.

A. It is not a balance maintained from minute to minute; no. That is right.

Q. And there are times when there is a very considerable flow in each direction. Isn't that correct?

A. I don't see that it is so very considerable; no.

24,000 a day would be 1,000 an hour. 24,000 a day difference I do not find there. Still that would be a thousand an hour. A thousand an hour certainly is not considerable to Public Service Electric and Gas Company. That is a drop in the bucket. I would hardly consider it considerable to us. Those things are relative. They have to be.

Q. Do you relate them to the system or relate them to the ability to serve a customer? I mean if you related the thing you have the two elements of relation that can be used.

A. My two elements of relation are the two elements which make this interconnection, the two systems. Public Service has several hundred thousand peak load. I don't know just what it is. Now, I am relating a thousand an hour. A thousand of that is not important relatively to their load. I don't think it is very important relatively to ours.

Q. How about 2,000 or 2,500 kilowatts?

A. If you go up high enough you will reach the point, of course, where it is.

Q. 2,000 or 2,500?

A. Certainly I don't think it amounts to anything to Public Service, when they have several hundred thousand peak load. 2,000 in our little system for a short time does not amount to much. If it runs all day it would not affect us vitally.

Q. But it is flow of energy?

A. Yes.

Q. And it is a determinable quantity that indicates that it persists throughout all of these days with very few exceptions, and that flow is in both directions during the day, as a rule?

A. Yes.

MR. PAXSON: Just a moment, please. I move that the question with the word "very few exceptions" be stricken. He has already gone down the line and

said there were not many exceptions. You have such an involved question that I do not believe you intended to say that.

EXAMINER SPENCER: Is that an objection to the last question?

MR. PAXSON: Yes.

EXAMINER SPENCER: Will the Reporter read the question, please?

(The question was then read by the Reporter.)

MR. PAXSON: He has taken him down the line; and he showed him, and he said he could not generalize. Now, he has put in "very few exceptions" to catch him, I guess. The thing speaks for itself. You see there are a number of questions there.

MR. McALLISTER: As the questions were put and as the answers were given they were correct.

EXAMINER SPENCER: What is your objection?

MR. PAXSON: The question contains three questions and the answer was "yes".

Let him ask each question separately.

EXAMINER SPENCER: I assume the witness meant "yes" to each question, if there were three questions.

You may proceed.

MR. McALLISTER: I am sure the witness was not misled.

MR. PAXSON: All right. I will withdraw the objection.

EXAMINER SPENCER: You may proceed with your examination.

BY MR. McALLISTER:

Q. During the times when there was a continuous flow of energy to you from Public Service Electric and Gas Company of, let us say, from 1,000 to 2,500 kilowatts, to that extent your generating equipment is relieved of the generation of that amount of electric energy?

A. Yes, sir.

Q. In supplying your customers it performs the same function that a like amount of energy would perform, whether you bought it as emergency energy or as economy flow? Isn't that true?

A. At the time any energy comes over into the system it is used in that way at that time.

Q. If you had arranged with Public Service Electric and Gas Company for economy flow energy and you were relying upon that for some reason in supplying the load that you had on the line, if for some reason Public Service advised you that they could no longer furnish it to you, if there was necessity for it on your line you could then call upon them for the continuation of that same flow as emergency energy under your emergency contract? Isn't that true?

A. It is true if they have it; yes. I understood from your question that they could not supply it.

Q. They were unwilling to supply it further on the economy flow basis but for some reason you were depending upon it, and then at that instant you could call upon them to supply it to you as emergency power?

A. We could if we had an emergency. When we take economy flow power we have enough capacity on our lines to take care of all of our load, regardless of the emergency flow arrangement.

Q. But what I am saying is that if something had occurred so that that was to be pulled off the line and it was suspended suddenly you could call for the continuation of that on an emergency flow basis because if it was

going to affect your line it would be an emergency?

A. If the emergency occurred just when they cut it out we could call upon them for an emergency. We could ask them for it.

Q. In reality the only difference would be a difference in price?

A. There would be a difference in price. There is no doubt about that. The answer to the rest of your question depends upon why they would stop the flow, the emergency flow.

MR. PAXSON: You mean stop the economy flow, don't you?

THE WITNESS: Yes; I mean the answer to the rest of the question would depend upon why they stopped the economy flow.

BY MR. McALLISTER:

Q. The emergency contract works both ways, doesn't it?

A. Yes.

Q. They can rely upon you in case of emergency?

A. Yes.

Q. As well as you can rely upon them?

A. Yes.

Q. To the extent of your reasonable capacity there is an obligation which runs both ways, that one will come to the assistance of the other?

A. As I understand it, the obligations are the same. They can rely upon us for what we give them, upon what we can give them, and vice versa. They can't get it if we haven't got it. If they haven't got it we can't get it, even in emergency. They say they haven't got it and that they are not equipped for it. There is no firm power in the thing at all.

Q. But, as you explained this morning, Mr. Lytle, it is as reasonably dependable, so far as you are concerned,

as an interconnection can possibly be in meeting any condition that might arise on your line?

A. It has proven to be dependable in the past.

Q. And it is such that you would reasonably expect it to be dependable in the future, isn't it?

A. Oh, yes; as you can reasonably expect it to be.

Q. There is just one term that you used this morning that raised a question in my mind. It may be perfectly clear to you. But you said it was impossible to control the flow through the interconnection and you said the direction of that flow and its quantity was unpredictable. You used the word "unpredictable". What did you mean by that?

A. Practically I meant this: I am operating a system right now, and I cannot tell five minutes from now or ten minutes from now or an hour from now what the incidental flow will be. I cannot predict what it will be. It comes on quickly. We cannot control it.

Q. There is a certain range, then, within which you would expect it to operate, isn't there?

A. Oh, yes; there is a certain range. The range we know from experience. But, as I say, we cannot predict what will happen. Within the range at which it has operated I cannot predict even from one minute to the next. The men on the job there, the men operating the system, cannot predict it.

Q. Does the condition created by a variation of loads coming onto or going off the line on either system affect the flow to a certain extent?

A. I believe usually.

Q. What is your normal load on the Atlantic substation?

A. Do you mean our peak load?

Q. Well, the reasonably heavy load. I am not looking for just the one maximum load.

A. I would say the normal load would be within

2,000, or something on that order, although I haven't readings with me to straighten you out on that.

Q. At what substation is the heavy load on your system?

A. Livingston has the heaviest load.

Q. You have a substation in connection with your generating plant?

A. Yes.

Q. And you call that Livingston substation?

A. Yes; we call that Livingston substation. It is the biggest one.

Q. And if you figure the Atlantic substation to be 2,000 on that same basis what would be the load at Livingston substation?

A. I would say the load that we are delivering to our customers is in the neighborhood of 5,000 to 6,000 at Livingston. I would say about 5,000 on that basis.

Q. On that basis?

A. Yes.

Q. Then, as you come down on your system you mentioned two 33 k. v. lines which come down—to where?

A. Eltingville.

Q. From that point back to Livingston substation what portion of your system load would be located in that area?

A. 60 per cent or 70 per cent, or something on that order—all of the substations from Livingston out that way toward Eltingville, and I would say 60 or 70 per cent.

Q. In considering all of the substations which you have, are the loads at the substations other than Livingston about equally divided—five or six thousand at Livingston and about 2,000 at each of the others?

A. They are pretty close to being equally divided. Yes; it is fairly close to that.

Q. Then that would be based upon a load of about 20,000 or 21,000 kilowatts for the total system?

A. That would be sort of a normal load or average load. It would not be a peak load or a low load. It would be a day load, or something like that.

Q. What you might consider about normal peak load during the day?

A. Yes; that would be a pretty good way. You worked it out at 20,000 or 21,000?

Q. Yes.

A. Well, it is around 19,000. You worked it out pretty close. That is a pretty good figure.

Q. Aside from Livingston the rest of your load is pretty well split up through various substations? Of course, with the predominant load toward the northeasterly section of the Island?

A. Yes; I think that is about right.

Q. Livingston and over around St. George?

A. Livingston, St. George, Clifton—that is all thickly settled. It is a fairly well loaded section through there.

Q. Would the load on that section be heavier than the load on the other line, you might say from Eltingville to Livingston?

A. Well, both run from Eltingville to Livingston. I would like to have you show me. You said the other line running from Eltingville to Livingston. Both of them run from Eltingville to Livingston.

Q. I mean the other line, outside of the one that goes through St. George. One goes through St. George.

A. This line is the heavier load (indicating).

EXAMINER SPENCER: Indicate the line or describe it so that the Reporter will have it in the record.

THE WITNESS: May I say the easterly line?

MR. McALLISTER: I think that is right.

THE WITNESS: Actually the Island does not run North and South. It is all mixed up.

BY MR. McALLISTER:

Q. But you have no substation on that line from Livingston to Eltingville?

A. No, sir; not between Livingston and Eltingville.

Q. That is a straight 33,000 transmission line?

A. It is now. We expect a substation in there. We expect to put a substation in there, roughly half-way.

MR. PAXSON: Just a minute. Did you hear that question?

THE WITNESS: A straight 33,000 volt line?

MR. PAXSON: Transmission line, he said.

THE WITNESS: No; I do not admit that it is a transmission line at all.

MR. PAXSON: You were not putting something over, were you, Mr. McAllister?

MR. McALLISTER: No. But it indicates the normal reaction of the man, that it is a transmission line.

THE WITNESS: I actually did not hear the word "transmission" or I would not have said anything. I did not hear that word, and I want the answer qualified.

BY MR. McALLISTER:

Q. When interconnected systems are operated with a closed connection, either two or three systems, there is a condition between those systems as regards flow of energy which the operators are not in a position to control? Is that true?

MR. PAXSON: If the Commission please I want to object to that question.

MR. McALLISTER: I have just asked the witness the question, Mr. Examiner—

MR. PAXSON: Just a moment, please. We have listened to a long line of cross examination, a large part of which is not proper cross examination.

Is he asking his opinion as an expert now and making him his own witness, or what is he doing. Certainly there is nothing in his direct examination that has anything to do with three or four different systems.

MR. McALLISTER: The witness testified at rather great length regarding this flow, and he said it was unpredictable and uncontrollable, and he used any number of adjectives to describe it. He called it slop-over and incidental flow. What I want to know is the opinion of an expert engineer.

MR. PAXSON: Go right ahead.

MR. McALLISTER: I would like to make my statement complete before Mr. Paxson has any remarks recorded.

MR. PAXSON: Go right ahead.

EXAMINER SPENCER: You may proceed.

MR. McALLISTER: As I was saying, Mr. Examiner, the witness has testified regarding this character of flow between systems which are interconnected, and I have been attempting to confine my cross examination—

EXAMINER SPENCER: Are you asking about these interconnected systems you have been questioning him about?

MR. McALLISTER: That is exactly what I am asking him about. I would like to have the question read and put to the witness, and I would like to have an answer from the witness to the question.

EXAMINER SPENCER: Will the reporter read the question, please?

(The question was then read by the Reporter.)

EXAMINER SPENCER: That is concerning these particular connections to which you have been referring? Are you asking about the same system to which you have been referring and about which you have been talking to him?

MR. McALLISTER: It is the same subject matter, Mr. Examiner, yes.

MR. PAXSON: Is this a hypothetical question?

EXAMINER SPENCER: What I was trying to find out was whether you were continuing your cross examination on the same subject matter you were asking him about or whether you were asking him a hypothetical question as an expert.

MR. McALLISTER: I will say this, Mr. Examiner.

MR. PAXSON: I did not ask him any questions on any such testimony. Now, is he making him his expert witness?

EXAMINER SPENCER: He is asking him now about this same system, between the Staten Island and the Public Service. I think the witness has testified to it.

MR. McALLISTER: He testified to it very much at length on direct, I think, and on cross examination, and I would like to have him answer the question just as it stands.

EXAMINER SPENCER: Mr. Lytle, will you now answer the question?

THE WITNESS: Yes, sir. I have had experience only with operating two systems—actual, practical experience.

BY MR. McALLISTER:

Q. But if there was a third system tied in there, as the Jersey Central is tied in at Mechanic Street substation, that operation also has an indetermined effect upon the flow of energy between Public Service and Staten Island Edison Corporation?

MR. PAXSON: Is that material? That is a purely hypothetical question on assumed facts. Assuming the facts to be true, to which the witness has not testified, is the question.

MR. McALLISTER: Mr. Examiner, I object to this sort of interference with the cross examination when the only purpose Mr. Paxson can possibly have is to attempt to indicate to the witness the course of answer that he is to make to the question or, rather, to indicate the kind of answer.

EXAMINER SPENCER: I think counsel has a right to object to the question.

MR. McALLISTER: But to make an argument upon that and on top of the objection is another thing.

MR. PAXSON: May I not give the Examiner my reasons for the objection?

We did not offer this witness as an expert witness to testify to hypothetical questions. We offered him to testify to actual operating conditions. I object to the question.

MR. McALLISTER: I will ask that the question be answered, Mr. Examiner.

EXAMINER SPENCER: I will overrule the ob-

jection, Mr. Paxson, and give you an exception.

The witness will answer the question.

THE WITNESS: I don't know what will happen between Jersey Central and Public Service. There is equipment made by which this incidental power can be controlled and limited. I don't know what they have there.

BY MR. McALLISTER:

Q. If there is none of that equipment which you say will control the incidental flow what will your answer be to that question? Just assume that they merely have that equipment which you have to control your interconnection.

A. Oh, there might be some slopover. There probably is some.

Q. Electric energy is not a respecter of ownership of line, is it?

MR. PAXSON: Is he asking for a legal conclusion?

MR. McALLISTER: No. I am asking him as a fact.

MR. PAXSON: We put this man on as a practical engineer.

MR. McALLISTER: As a matter of fact, I am asking him that question not as a legal opinion or anything else.

THE WITNESS: You asked me the question. You ask me what electricity is, exactly what it is, whether it is a respecter of ownership. You are inferring that electricity is something material. I don't know what it is. You don't know either, and nobody else does. I don't know what electricity is. I never saw a bit of it in my life. Nobody else did. When you use the word "flow" I don't know whether that is

true or not. You don't know whether it flows or not. Nobody knows. You can, Mr. McAllister, transmit energy without flow of a material thing. Energy also is something very vague and indefinite, so far as my head is concerned. You asked me if it is a respecter of ownership.

BY MR. McALLISTER:

Q. Do you deal with energy every day and refer to it as energy or as electric energy?

A. Yes; I do.

Q. You do do that?

A. Yes; I do.

Q. And do you use the term that electric energy is transmitted or flows?

A. Do I use the term?

Q. Yes.

A. I generally use the word "energy"; not that electricity flows. I generally use the term "supply energy".

Q. Suppose you have a watt meter on the line and somebody asks you which way it is flowing; doesn't that mean anything to you?

A. Of course, it does. It means which way the energy is flowing.

Q. The "flow" there is a proper term to use, is it not?

A. I would say it is. I would say that it is a proper term to use, that is, in connection with energy.

Q. Is it the term that is generally used?

A. The flow of energy?

EXAMINER SPENCER: Please continue your examination. Don't argue.

BY MR. McALLISTER:

Q. Going back to the question I put to you a few minutes ago and relating it to an operation on your system, Mr. Lytle, and a load at the substation at Eltingville

being supplied from the generating plant at Livingston, how will that divide over the two transmission lines that connect the substation and the generating plant?

A. How will the load divide at Eltingville?

Q. Yes.

A. I couldn't tell you exactly, but I think it is fairly equal. I can't tell you exactly.

Q. Why do you say it would be fairly equal?

A. Just because I have made some calculations and tried to get some idea as to how it would be.

Q. And it does divide approximately equally?

A. I think so. We haven't watt meters on those circuits. If we had them I could tell you exactly. But I can't tell you.

Q. If that load were increased, then the load would divide approximately evenly over the two circuits? I mean the increased load would split up and a half would flow over each?

A. At Eltingville?

Q. Yes.

A. The energy would flow in approximately equal amounts. There are two circuits. I am basing that upon some calculations I made sometime ago; and that is what sticks in my mind. It is a thing that can be calculated.

Q. If you had to determine the amount in each circuit, how would you find it?

A. I would first ascertain my impedences of the two circuits around there. The load would probably divide up in inverse proportion to the impedences; that is, the higher the impedences the less it carries.

Q. In other words, the load would divide in inverse ratio to the line impedences?

A. Yes.

Q. As a matter of fact, if the impedences over one was two ohms and it were three ohms over the other line, 2/5 would flow one way and 3/5 would flow the other way?

A. That is right.

Q. For general operating purposes what do you take into consideration in determining the line impedences?

A. That is a physical characteristic of the line which can be found from wire tables.

Q. The size of the wire and the distance are the principal factors?

A. Length of wire and spacing of conductors.

MR. McALLISTER: I have no further cross examination.

EXAMINER SPENCER: Have you any questions, Mr. Paxson?

MR. PAXSON: Yes, I have, Mr. Examiner.

EXAMINER SPENCER: You may proceed.

Redirect Examination

BY MR. PAXSON:

Q. Mr. Lytle, I believe in answering questions on cross examination you stated you placed more reliance upon your own generating capacity than you did on these submarine cables. You have had a number of outages on these submarine cables, haven't you, and failure of service?

A. Yes, sir.

Q. Will you please give us some of these failures, the duration of time, when they occurred, and how many there were, and give us the details of them for a period, if you have it. Let's work backwards. Have you had any failures on these submarine cables in 1938 for the period from January 1, 1938, to March 14, 1938?

A. Yes, sir.

Q. What?

A. The interconnection, both cables were out of service entirely due to failures on one cable when it was neces-

sary to pull up the other cable too, the following times:

1938, February 28th, 6:42 P. M. to 7:7 P. M. Please note that was a heavy load period. It is near the peak.

March first, 10.12 a. m. to 4:55 p. m.—practically all day, or all through the early morning hours and the working day.

March 2nd, 9:45 a. m. to 11:45 a. m., which was about half of the morning.

March 11th, 9:57 a. m. to 10:27 a. m.

March 12th, 9:21 a. m. to 11:52 a. m.

Those are all that I have in 1938.

Q. Now, let's take up 1937 and see whether we had any failures in these submarine cables.

A. Both cables were out of service in 1937, as follows:

November 24th, 11:40 a. m. to 12:11 p. m., which is less than an hour.

November 27th, 1:37 p. m. to 2:10 p. m.

Also in 1937 from May 4th, 7:45 a. m. until May 9th, at 6:20 a. m. That is from the 4th to the 9th, something like five days that both cables were out of service.

Q. But you were able to carry your load there all of the time?

A. Absolutely. I never depended upon the cable to carry our load except in case of break-down.

Q. Proceed, please.

A. That is all I have for 1937.

Now, in 1936, the interconnection was open entirely May 30th, 1:01 p. m., early in the afternoon, to 1:36 p. m.

June first, 2:21 p. m. to 7:30 p. m.

June 2nd, 8:42 p. m. to 9:04 p. m. And that is the time or about the time of the evening peak in June.

Those are all I have.

Q. Mr. Lytle, you stated more reliance you placed upon your own capacity than you did on this Public Service tie-line, I believe.

A. Yes, sir.

Q. Have you any contract which obligates Public Service Electric and Gas Company to supply you energy, even for emergencies?

A. No, sir. It is not my understanding that they have to supply us in emergencies. They will supply us if they have it available.

Q. What is the understanding between the two parties, if there is any.

MR. McALLISTER: Now, Mr. Examiner, I must insist that the contract speaks for itself in that regard.

EXAMINER SPENCER: That is what he is asking about.

MR. McALLISTER: The contract is in the record.

EXAMINER SPENCER: He said he does not have any contract.

MR. McALLISTER: It is in the record.

MR. PAXSON: If the Examiner please, there is a letter form of contract which I believe was entered into because of the circumstances that the Federal Power Commission, under its rules, desired that where there was no written contract that the arrangement be expressed in writing so that the Commission could be informed. That is one of the rules of the Federal Power Commission. The contract is absolutely silent on this point and does not speak for itself; and they have always had an oral arrangement. He is entitled to tell what it is, if he knows.

EXAMINER SPENCER: Is that letter in evidence?

MR. McALLISTER: Yes, Mr. Examiner.

EXAMINER SPENCER: You are asking about an additional, verbal contract?

MR. PAXSON: I am asking about their oral arrangement. It was always an oral arrangement until they filed this little written memorandum.

EXAMINER SPENCER: You may proceed.

THE WITNESS: We understand that the Public Service Electric and Gas Company will give us emergency power if they have it to give us. They understand that we will give them emergency power if we have it available.

BY MR. PAXSON:

Q. But if you do not have it available there is obligation?

A. If we do not have it available there is no obligation. I might cite a little instance I know about.

We had some labor trouble and we didn't know but that there would be some sabotage on our property. During this time I called them and told them that we might need emergency power if some of the lines were cut. They said: "we will do the best we can". But they wouldn't promise anything. It might affect their own labor relations.

During that time one evening, and while our men were out, we were all worried about the plant being shut down all day and they called the system operator, who called me, and wanted to know if we could give them 10,000 emergency. There was a fire near Mechanic Street Substation.

I was sort of puzzled for a few minutes, but I finally told them we would give it to them. But they did not take it. They made some other arrangements.

A lumber yard was burning, or something like that, I believe. It is pretty distinct in my memory because I remember the strike pretty well, and I remember getting the call for emergency at a time when we thought perhaps we

might have to have some emergency power ourselves. That is all true. That happened late in October or early in November of 1935.

Q. I believe you testified with respect to this economy energy that the price would be determined by the cost of generating and the cost of restoring the least efficient unit. Is it or is it not true that the sale of economy energy results in increased generation by the least efficient unit on which the price was based?

A. It would. They would put any load on the last unit.

Q. My question was whether or not it would result in increased generation on this unit on which the price of economy flow was based.

A. It would.

Q. Mr. Lytle, how are the governors on your generators operated? Are they operated by change of 500 k. w.?

A. We operate them on the interconnection on about 500 steps or step-obligation of about 500. The governors may change on smaller loads than that.

Q. Does that have anything to do with the ability to reach what you call a perfect balance on this incidental flow, that is, the condition of the governors? In other words, are they set so that you can get a perfect balance or do they operate only within a certain limit of change?

A. No; we can't get a perfect balance by means of the Governors. We would do it if we could do it.

Q. But that is the method you employ—automatically? That is the method you use to push back the power?

A. That is right.

Q. Is it or is it not true that wherever you have economy flow the purchasing company must have capacity enough in service to carry its own load?

A. Whenever we have economy flow we have to have enough capacity on our lines to carry all of our own load.

Q. Then no emergency could exist if economy flow

were instantly withdrawn, could it? You would not call that an emergency?

A. No; you would not call it an emergency if it were withdrawn. An emergency could come on at that time. It is conceivable.

Q. But the cessation would not constitute an emergency?

A. You would have an additional emergency. The cessation would not constitute an emergency.

MR. PAXSON: That is all.

MR. McALLISTER: I have a few questions.

EXAMINER SPENCER: You may proceed.

Recross Examination

BY MR. McALLISTER:

Q. Mr. Lytle, in response to a question by Mr. Paxson, I understood you to say that when economy flow energy is sold it naturally follows that what energy is necessary for the selling company to generate to make up that which is sold will come from the least efficient generator or the last generator that is on the line. Did you mean to say that or did I misunderstand you?

A. I said they would put it on the last generator on the line, the least efficient generator on the line.

As an operating man I would say that they have a certain load schedule for each line. We will say "A" station is 10,000, "B" station 50,000, and "C" station 60,000. Now, let us say "A" was the least efficient, the last one on. Now, I imagine the way they would handle their loading, if some additional load would be asked of them, would be that they would put it on that machine.

Q. Suppose you were going to get 2,000 k. w.; might it not just be put on the line and let it be split where it will?

A. I don't think they would do it that way.

Q. They could not?

A. It is possible. I don't think they would do it that way. I hardly think it is possible with the large interconnecting system. It would be impractical to do it, I think. That is what I think about it.

Q. If you just put on an extra 2,000 as if it were being passed to you over the interconnection, but instead of being a load coming to you it was an incidental load in a certain area that they were serving 2,000 kilowatts—I mean 2,000 was the load cut in, let us say, on the distribution line; now, how what would it be? How would that divide?

A. They would adjust their last machine to pick up that 2,000.

Q. They would adjust their operation so that they could handle it?

A. Yes.

Q. It might be any one of the generators on the line?

A. It would logically be the last one on the line. They want it for economy purposes, I presume and for capacity purposes, and so on. They would want to start in with one machine up to a certain point with a fixed load, and put on another machine or plant with a fixed load, and so on, and as the load increased, we will say, they would pile it on to that last unit.

Q. The load, when it first came on, would naturally divide itself among the various units?

A. When it first came on.

Q. And if the generators were sufficiently able to handle that without very much effort they might permit it to be carried in that fashion?

A. That would not be the proper operation. As soon as they got that additional load the proper way to operate

the system would be to pile it on the last machine they put on.

Q. Or on some other machine, if they elected to do that?

A. Yes; they could elect to put it on any machine, of course, if the machine would take it. They could elect to do it, but they wouldn't do it.

Q. In any event, you don't mean it would be the energy that would be supplying the load that was cut in on the distribution system before you could take whatever is on the line?

A. We take it off the bus.

Q. And the same way with the customer?

A. We take it off that bus at Mechanic Street, yes, the same as the customer.

Q. Wherever it comes from?

A. Yes.

Q. Now, if there is a failure of the submarine cables connecting you with Mechanic Street at time of the peak load, whether it is daily or any other time, you immediately get your cold reserves spinning, don't you?

A. When there is a failure on peak load?

Q. When there is a failure of the submarine cable during the time of peak load or any load you have, you immediately start your cold reserves spinning?

A. We get up our cold reserve.

Q. And you repair the cables with all the reasonable speed at your disposal, I assume.

A. We don't do it as quickly as we can, no, as a matter of fact. We don't work overtime. Recently we had to watch every penny. We work the working day, and we don't work overtime. We have worked some overtime, but we don't work continuously, that is, bust into it and try to get it done.

Q. You prefer to incur the expense of maintaining the cold reserve rather than maintain what is ordinarily

called reserve on the line. I mean rather than incur this additional expense. You prefer to incur the expense of maintaining the cold reserve rather than incur this additional expense for labor, and so on, that it would be necessary to have if you worked overtime and during the night, and so on?

A. Yes; we have done that. Of course, some of the work on the submarine cable is pretty hard to do at night anyway. In a pinch you might putter away at it. But it is not so much a case of doing the work and not wanting the men to get the work, but it is a case of doing work at night. You have to have barges. They pull up the cable. And work of that kind should be done when there is good light so that the men can see what they are doing, and not get anybody knocked overboard.

Q. Do you maintain that cable or does Public Service Electric and Gas Company?

A. Public Service Electric and Gas Company maintains the cable.

Q. Public Service and Gas Company does all of the repair work on it?

A. Yes, sir.

MR. McALLISTER: That is all the cross examination I have.

Redirect Examination

BY MR. PAXSON:

Q. Mr. Lytle, in case there is economy flow and the load is not put on the machine on which the price of that economy flow was based, what would happen?

A. They would overload and disturb their schedule.

Q. I am speaking about the price. Would there be any adjustment later?

A. Oh, no; not that I know of.

Q. The price is based upon the machine which is supposed to be the one that would be put into operation if the economy flow were not attained?

A. Yes.

Q. The company that then put into operation another generating unit, if it were more efficient, would not be living up to its contract, would it?

A. Will you repeat the question, please?

EXAMINER SPENCER: Will the reporter read the question, please?

(The question was then read by the Reporter.)

BY MR. PAXSON:

Q. What is your answer?

A. No, hardly.

Q. Wouldn't there be some adjustment thereafter, if it were discovered that through error—

A. I imagine there would be; but I don't remember that that has ever occurred.

MR. PAXSON: That is all.

EXAMINER SPENCER: We will adjourn at this time, gentlemen, until ten o'clock tomorrow morning.

(Whereupon, at 4:30 o'clock p. m., Monday, October 3, 1938, an adjournment was taken until Tuesday, October 4, 1938, at 10:00 o'clock a. m.)

Washington, D. C.,
Tuesday, October 4, 1938.

The hearing in the above-entitled matter was resumed, pursuant to adjournment, in Room 1201 Hurley-Wright Building, 1800 Pennsylvania Avenue, N. W., Washington, D. C., at 10:00 o'clock a. m.

Before:
Carroll B. Spencer, Trial Examiner.

Appearances:
As heretofore noted.

PROCEEDINGS

EXAMINER SPENCER: Gentlemen, the hearing will now be resumed.

You may call your next witness, Mr. Paxson.

MR. McALLISTER: Mr. Examiner, I had a few questions I wanted to ask Mr. Lytle. When we adjourned Mr. Paxson was questioning Mr. Lytle. In the course of that questioning I understood we adjourned.

EXAMINER SPENCER: We adjourned after the examination was completed, as I understood it.

MR. McALLISTER: As a matter of fact, Mr. Examiner, I understood the Examiner to say "We will adjourn until ten o'clock tomorrow morning"; and there was no opportunity given to me to ask further questions.

EXAMINER SPENCER: I thought I asked you if you had finished and that you said there was no further questioning.

MR. PAXSON: After all, I had asked just one question. We had been through with his cross-examination before. We have had direct and cross and redirect and recross. Now, how many more recross-examinations will there be?

MR. McALLISTER: Let's look at the record and see. You asked a number of questions. I have the record right before me here.

EXAMINER SPENCER: The record shows that the witness was on redirect examination. The statement I had reference to is on page 579. And thereafter the witness was taken on redirect and Mr. McAllister had stated "This is all the cross-examination I have", on the page to which I referred.

MR. McALLISTER: Of course, that related to what had transpired before.

MR. PAXSON: Is this with reference to that one question?

EXAMINER SPENCER: He is cross-examining on the facts brought out on the redirect examination.

MR. McALLISTER: On any matter to which it relates.

MR. PAXSON: It covered a wide territory yesterday.

EXAMINER SPENCER: You may proceed, Mr. McAllister.

JAMES H. LYTLE,

resumed the witness stand and, having been previously sworn, testified on behalf of Respondent as follows:

Redirect [Cross] Examination

BY MR. McALLISTER:

Q. I would like to straighten out these last few questions on redirect examination.

Economy flow energy between Staten Island Edison Corporation and Public Service Electric and Gas Company, Mr. Lytle, is a matter that is controlled by the contract between the two companies? Isn't that true?

A. I don't understand it that way. I believe it is controlled by a verbal agreement. I think it is mentioned

in the contract. The way we operate, it is controlled by verbal agreement. We fix the rates and negotiate with them and that sort of thing.

Q. Mr. Lytle; I could not hear a word you said.

EXAMINER SPENCER: I could hear neither the question nor the answer.

Will the Reporter read the question and answer, please?

(The question and answer were then read by the Reporter.)

BY MR. McALLISTER:

Q. It was that verbal contract, or the interpretation of that verbal contract that induced you in response to the last few questions of Mr. Paxson to say that the price is supposed to be determined upon the basis of the last machine that goes on the line or the least efficient machine operating on the line, or something like that? That matter of verbal understanding is the matter upon which you determine the price?

A. Yes; it is a verbal understanding upon the price of the economy flow.

Q. And is it the same interpretation of the contract that led you to say this always assumed that this energy was coming from Public Service Electric and Gas Company?

A. I did not say that thinking of the contract particularly. I said that because in our negotiations or in our talks with them, that is, our verbal negotiations, it gave me that impression always that it came from them. Nothing in the contract, I believe, gave me an impression on that matter at all.

Q. Why would that question arise as to where the energy actually came from?

A. It never arose, sir.

Q. You say that was always your understanding?

A. It was. We talked to them and we were getting power from them. Nobody ever questioned it any more than that, so far as I remember.

Q. On page 465 you say: "They led us to believe that it was power generated by Public Service Electric and Gas Company".

Now, what did they say that led you to believe that?

A. All of our conversation was that we were buying power from them and I didn't think anything more about it. I didn't go into any negotiations with them in any way in connection with any other interconnection that they have or that they had. Our dealings were simply between Staten Island Edison Corporation and Public Service Electric and Gas Company.

Q. Then is it proper to say that you were not concerned with the source of the energy that came to you from Public Service Electric and Gas Company?

A. I did not give it any thought. I did not know. As a matter of fact, I don't know today all of the interconnections they may have. I just don't know. We were dealing with them, and I always considered it was power that they generated. Perhaps I am wrong, but that is what was in my mind. We did not discuss it with them.

Q. Where is their nearest generating station in relation to the interconnection that you have with them?

A. They have three large stations. I don't know which one is the nearest. They are Essex, Kearney and Marion. And I don't know which one is the nearest.

Q. They are pretty much in the same general location, and there wouldn't be much difference in the distance from any one of them as compared with the other?

A. I think that is right.

Q. There might have been a few miles, but they are not very far?

A. No.

Q. What is the line distance from Mechanic Street to those generating stations?

A. I couldn't tell you that exactly. I can only give you a rough guess, which would be 10 or 12 miles. That is something I do not have in mind.

Q. You don't know as to that?

A. No. I would make an estimate that it is 10 or 12 miles, or something of the kind.

Q. Did you say yesterday the price of that economy flow is determined monthly, or the settlement is made monthly? We will put it that way.

A. The settlement is made monthly.

Q. And if there is any variation or change in the price it would have to be made monthly or a continuation of the price before?

A. Monthly has been the rule. It is possible that it may vary during the month.

Q. Or from day to day?

A. It could vary from day to day so far as our verbal agreements with them go.

Q. How about the incidental energy? How is the price on the incidental energy fixed?

A. We have tried to arrive at fairly long intervals—not intervals but several months—on the average incidental flow of each station and get an average from that. We have never considered the incidental flow as highly important because the understanding was that we would keep it to a minimum and send some of it back.

Q. What has been your price?

MR. PAXSON: Let him finish, please?
Go ahead, Mr. Lytle.

THE WITNESS: So we never considered that there would be any great money difference.

BY MR. McALLISTER:

Q. What was your average price on the economy flow during 1937?

A. During 1937?

Q. Yes.

A. On a kilowatt hour basis?

Q. Yes.

A. I do not have the exact figures with me, but it would run in the neighborhood of 4.5 mills economy flow, I believe.

Now, wait a minute. In 1937?

Q. Yes.

A. In 1937 we took it only two days, I believe, in the whole year of 1937.

Q. What was the price?

A. That was economy flow.

Q. What was the price?

A. I would say roughly 4.5 mills.

Q. You took considerable quantities in 1936?

A. Yes.

Q. What was the price during that time?

A. In 1936?

Q. Yes.

A. I do not have those figures. It was in the neighborhood of 4 mills or 4.5 mills. I was trying to think back what the coal market was in 1936, and I just can't remember it. But it was something on that order. That is on the kilowatt hour basis. But I may be off on that.

Q. Don't you determine your costs on economy flow and determine their costs and add them together and divide them by two?

A. Yes.

Q. Do you mean to say your cost of generation would be as high as 4.5 mills?

A. Yes. May I explain?

Q. Yes.

A. Perhaps I did not make it clear yesterday. We took the increment costs and added them and divided by two. If we save running a machine and on account of that we are enabled to operate with one less machine than we would otherwise, we add into that the no load cost of running that one machine and split the difference, which makes that economy rate higher. It is higher than the actual increment rate because you have the machine saving there.

Q. And you take that into consideration in determining the price for the energy?

A. Oh yes; if we save a machine that is part of the saving due to the economy flow operation.

Q. To that extent the usual method of determining incremental for each company and adding them together and dividing by two, you would have to modify that ordinary price by also taking into consideration then the other saving to you due to the fact you are not operating the machine?

A. Yes, sir. That is only fair. That is a part of our agreement. We give them half of that saving.

Q. You named the substations on your line yesterday?

A. Yes.

Q. And you indicated on the record that out of each of those substations or certain of them you had low voltage transmission lines which served the distribution area. Do you have those distribution lines from each of the stations? I think you answered yesterday in connection with the 6,900 voltage lines and named the substations from which those lines emanate.

MR. PAXSON: Just a moment, please. As I understand his testimony, Mr. McAllister, Mr. Lytle carefully stated that there were no transmission lines but they were all distribution. So why say that he said transmission lines?

EXAMINER SPENCER: The witness will recall his testimony.

MR. PAXSON: I wanted the witness to be aware of what his testimony was in view of his prior testimony.

THE WITNESS: As I remember it, I stated that we distributed load from various substations over a distribution line. I did not say we had transmission lines any place or any time yesterday. Transmission lines are not in it now so far as I am concerned. We do distribute loads from various substations; yes, sir.

BY MR. McALLISTER:

Q. You named various ones from the Atlantic substation. What distribution lines do you have that emanate from that substation?

A. What distribution lines?

Q. Low voltage lines, less than 33,000.

A. Less than 33,000?

Q. Yes.

A. We have 6,900 volt lines and 2,300 volt lines from the Atlantic substation other than the 33,000 volt lines.

Q. Where does that 6,900 voltage line lead to?

A. Where does it lead? Well, it goes west and north ultimately to Eltingville substation. It can also be connected by switches with Livingston and also Arlington. I think that covers it.

Q. What is the purpose of that line?

A. The purpose of that line is to serve a number of our customers in that section. It can also serve just a little bit of lighting load also, as I remember it.

Q. Does it serve commercial customers, manufacturing and the like?

A. Yes.

Q. Is that what you have in mind?

A. Yes.

Q. And it also carries some domestic load?

A. Not very much. There is some domestic load in there that is sometimes operated from that line.

Q. When it leaves the substation, Mr. Lytle, just describe it, please. Does energy from the 33,000 volt line at the substation pass through a bank of transformers and come down the low side at 6,900?

A. At that substation it comes out at 2,300. There is a bank of transformers at that substation transforming from 33,000 to 2,300. There is a second bank that transforms from 2,300 to 6,900. It sounds sort of complicated, and it is something like "Topsy" it grew up that way.

Q. That is the way you operate at that Atlantic substation?

A. Yes.

Q. How about the 2,300 volt line? What does that line serve?

A. It serves us general light and power load in the vicinity of Atlantic substation.

Q. Generally speaking, Mr. Lytle, those are the only two low voltage distribution lines that lead off from the Atlantic substation?

A. They are not the only circuits there of the two voltage classifications. There are three 2,300 volt circuits there, I think it is, one of which feeds street lights, and there are three 6,900 volt circuits out of there.

Q. But the function of the different classifications is about as you have described it?

A. To the best of my knowledge.

Q. At the other substations do you have from each of those substations low voltage lines which lead off to serve a distribution area?

A. Not at all of them.

Q. Will you please name the ones where that same operating conditions exist that you have described for Atlantic substation? I put it that way so that we will not have to go through the questioning. You know your substations. Now, name the substations where the operation is substantially similar to that that you have described at Atlantic station?

A. At Eltingville there are distribution lines running out of there of 6,900 and 2,300.

At Arlington it is the same.

At Livingston it is the same.

At St. George it is only 2,300 and no 6,900.

At Clifton it is only 2,300.

At Grant City it is only 2,300.

At South Beach no 2,300 or 6,900.

At Oldtown, no 6,900 or 2,300.

Q. What is the function of those two substations?

A. Railway.

Q. What is that?

A. Railway; Staten Island Rapid Transit Railway.

Q. Will you name the substations from which you have 33,000 volt connections to the Staten Island?

A. We have 33,000 volt connections to the Staten Island Rapid Transit Railway at Arlington, St. George, South Beach, Oldtown, Eltingville and Atlantic.

Q. Does the Staten Island Rapid Transit Company operate directly on the current that you supply to them or does it pass through transformers, or is it otherwise changed at any place before it is used by the Staten Island Rapid Transit Company?

A. The Stater Island Rapid Transit buys from us at 33,000 volts, transforms it and converts it to D. C.; that is, most of it. They use a little A. C. Most of it is direct to D. C. for railway operations. It is 550 volts or 600 volts or something on that order, I think. It varies.

Q. Where are those transformers located that they operate and utilize in accomplishing that change, with relation to your substation?

A. At the substation.

Q. At the substation?

A. On the substation property.

Q. For all intents and purposes, Mr. Lytle, if the ownership were not known it would appear to be a part of your property?

MR. PAXSON: May I hear that question again, please?

(The question was then read by the Reporter.)

THE WITNESS: It would appear, I suppose; yes.

BY MR. McALLISTER;

Q. I mean directly connected?

A. Yes.

Q. And you might say an integral part of the layout. Isn't that correct?

A. It would appear to be the same substation; yes.

Q. But you meter it to them at 33,000 volts?

A. Yes.

Q. So that they would stand whatever loss might occur in the change to the direct current which they use?

A. Yes, sir.

Q. The contract which you have with Public Service Electric and Gas Company places no limitation upon you as to the amount of emergency energy that you can receive from Public Service Electric and Gas Company, does it?

A. The contract does not.

Q. What would limit the amount which you could receive from them at any time?

A. What they could give us at any particular time.

Q. How about the capacity of the connection?

A. Naturally it is limited by the capacity of the connection.

Q. That is the first and primary limitation?

A. I thought that was so obvious that I did not mention it. But aside from the capacity of the connection, they can limit us.

Q. Do you know what their spinning reserve is on the line at all times?

A. I did have that figure in mind, roughly, but I don't know what it is now, except that it is considerably more than the capacity of the interconnection. That is my understanding.

Q. If it were 44,000 k. w., that would be in excess of the capacity of the interconnection, wouldn't it?

A. If it were 44,000?

Q. Yes.

A. Yes; 44,000 is in excess of 25,000.

Q. 25,000 is the estimated capacity of the interconnection?

A. Yes.

Q. The two circuits that you maintain from Mechanic Street to your Atlantic substation?

A. It is 25,000.

MR. McALLISTER: I have no further questions.

EXAMINER SPENCER: Do you wish to ask any more questions, Mr. Paxson?

MR. PAXSON: I believe I have only one question, which was made necessary by the cross examination.

EXAMINER SPENCER: You may proceed.

Redirect Examination

BY MR. PAXSON:

Q. I believe you stated in your answers to Mr. McAllister that settlement may be made monthly for this economy flow energy. Is that right?

A. I did.

Q. But you are not in any way trying to indicate that the price of economy flow is not established prior to the taking of this economy energy?

A. No, sir.

Q. In other words, you testified previously, and that testimony still holds, that it is a day to day transaction and day to day negotiation in fixing the price?

A. That is right.

MR. PAXSON: That is all.

Recross Examination

BY MR. McALLISTER:

Q. Mr. Lytle, didn't you say to me that you tried to project it over a longer period? I thought you told me that just this morning.

A. We can and may project it a day or two or we can do it every day.

Q. Or for longer periods?

A. We do not do it for a longer period than a month.

MR. McALLISTER: That is all.

BY MR. PAXSON:

Q. Mr. Lytle, what do you mean by projecting it over? I do not understand it myself.

A. What I meant was this, that we can arrange it in this way: we can arrange a price today and the price is good, and we say we will take it for several days with the

understanding that if there is any need to change or if there is any change in the factors making up the cost entering into it, the price can be changed. It is a very flexible thing, and it can be changed at any time, just the same as it can be stopped at any time.

MR. PAXSON: That is all.

EXAMINER SPENCER: Are there any further questions?

MR. McALLISTER: I have no further questions.

EXAMINER SPENCER: Then, the witness may be excused.

(Witness excused.)

WILLIAM F. MORRIS

was called as a witness for and on behalf of Respondent and, having been first duly sworn, testified as follows:

Direct Examination

BY MR. WESTON:

Q. Will you please state your name?

A. William F. Morris.

Q. And where do you reside?

A. 65 Morton Street, New York City.

Q. Will you state in brief your education and accounting experience?

A. I hold the degree of Bachelor of Science in Business Administration, majoring in accounting, from Fordham University. From 1918 to 1923 I was with Morris and Company in an accounting capacity. For about ten months after that I was in the public accounting practice on my own account. From 1924 I have been in the accounting and financial end of the electric and gas industry. I am presently employed by Public Utility Investing Corporation.

Q. Mr. Morris, have you made a study from an accounting standpoint of the power transactions between Staten Island Edison Corporation and Public Service Electric and Gas Company?

A. I have.

Q. What records and other data did you examine in connection with that investigation?

A. I examined the power station logs at Livingston, the system operator's logs and the records in the general accounting office of Staten Island Edison Corporation. All of those papers that I have examined are the records of Staten Island Edison Corporation.

Q. As a result of that study have you made up any summary?

A. Yes, sir.

Q. The facts that you ascertained as to the operation of the interconnection which has been described here between the two companies?

A. Transactions between Staten Island Edison Corporation and Public Service Electric and Gas Company over that interconnection between Mechanic Street and Atlantic.

Q. I show you this statement entitled "Staten Island Edison Corporation — Monthly summary of purchases of electric energy (other than incidental flow) from Public Service Electric and Gas Company, August 26, 1935 to March 14, 1938", and I will ask you if this is the statement which you prepared, and whether the facts thereon are correct?

A. Yes, sir. I prepared that statement, and the facts stated thereon are correct.

MR. WESTON: Mr. Examiner, I offer this statement in evidence as Respondent's Exhibit No. 4.

EXAMINER SPENCER: Is there any objection?

MR. McALLISTER: Just looking at it briefly, Mr. Examiner, I note that there is no information supplied for the period subsequent to March 14, 1938. If the information is to be accepted in the record for any period I will ask that it be made sufficiently complete for the year 1938 by continuing it subsequent to that date so that a reasonable picture of the condition may be ascertained from an examination of the statement. In other words, this is a factual matter; and while that date may have some significance in relation to some transaction, the factual showing is not a matter that begins and ends on the particular date. I would ask for the same information in 1935 if it were not far removed. We have 1936 and 1937 intervening, so I do not care about that. But for 1938 it is a continuation of the operation between these two companies immediately at the time that it may be under consideration. What transpires after that date is of primary importance.

MR. WESTON: Mr. Examiner, that is only a matter of argument. If he wants to bring out the facts after that date, let him do so. We are not building up Mr. McAllister's case. We have taken two points of time. We are definitely limited by some two points of time in describing any condition or state of facts. Now, we have taken this point as ending at March 14th. If he wants to go into it, let him bring it out himself.

EXAMINER SPENCER: Let the statement be admitted as Respondent's Exhibit No. 4.

The same information from March 14, 1938 to September 27th will be furnished upon a verified statement by the witness.

MR. WESTON: As a part of whose case?

EXAMINER SPENCER: As a part of the record,

Mr. Morris, can you furnish that for us?

THE WITNESS: I would prefer that Mr. Paxson agree to that, because I am working under Mr. Paxson's directions. If he tells me to go ahead and do it, I will do it. He is the boss.

EXAMINER SPENCER: It will be agreed, will it not, Mr. Paxson, that, so far as you are concerned, the information may be furnished over your objection?

MR. PAXSON: I have the same objection to this request that I had to the request made yesterday. I think the proper method for Mr. McAllister to pursue is to cross examine Mr. Morris as to whether or not he has those facts and then ask him for them.

Then, over my objection, if he is requested to supply them, we will supply them on the same basis we agreed to supply the other data which were requested.

EXAMINER SPENCER: That is satisfactory. That will get the data in the record.

MR. PAXSON: The period subsequent to 1938 has nothing to do with explaining this exhibit. It is a perfectly proper exhibit and, of course, it has been admitted.

EXAMINER SPENCER: How soon can you supply that, Mr. Morris?

THE WITNESS: I would like two weeks on it, Mr. Examiner—not that it will require two weeks, but I would like a little holiday. I have not had a vacation for a long time, and I would like to knock off for a couple of days.

What is today?

EXAMINER SPENCER: It is the 4th.

THE WITNESS: I had not planned to get back to New York until after Columbus Day. That is October 12th. I can get it up about the 19th or 20th, that is, if Mr. Paxson tells me to do it.

MR. McALLISTER: How about the Examiner requesting it?

THE WITNESS: Mr. Paxson is Counsel for the Respondent, and I am working for Mr. Paxson. He can fight it out with the Examiner.

EXAMINER SPENCER: I think it is perfectly understood, Mr. Morris, Mr. Paxson agrees that information may be furnished in the manner he indicated. The record will show his objection. It will not be introduced as a part of his exhibit or as a part of his case.

Let the record show that the witness is to furnish this information on or before October 21st.

With that understanding you may proceed to examine him with respect to this exhibit, and, of course, the cross examination will follow that.

Respondent's Exhibit No. 4 is admitted.

(The document above referred to was received in evidence and marked Respondent's Exhibit No. 4.)

BY MR. WESTON:

Q. Mr. Morris, will you please explain in brief the intent and purpose of this exhibit and what it shows?

A. It is a monthly summary of the transactions between Staten Island Edison Corporation and Public Service Electric and Gas Company covering emergency and economy flow.

There are a number of gaps in this statement where there is no month shown, but for those apparent gaps there were no such transactions.

In respect of each month shown on this statement or a portion of a month it shows the aggregate number of transactions, the total elapsed time during which either economy flow or emergency transactions took place during the month, and then it shows the k. w. h. flow segregated as between economy flow and emergency. It also shows the dollar cost of the economy flow, and in relation to the dollar cost of the emergency energy it shows in one column the energy and demand charge covering that cost, together with the annual adjustment which is provided for, as I understand it, under the contract each year.

Then, for each year or portion of a year shown here there is a summation of the data that have heretofore been mentioned.

Then there is the segregation showing the aggregate number of transactions of economy flow for the year or portion of the year shown.

Then it shows the average elapsed time of such flow, and then in relation to the emergency flow there is an aggregate number of transactions for the year or portion of the year, and then the average elapsed time.

Finally, the statement goes on to show—I will summarize this, if it is agreeable to you, Mr. Weston—that for the period August 26, 1935 to December 31, 1935, there were ten economy flow transactions, averaging three hours and twenty-seven minutes apiece, and there was one emergency transaction which lasted for one minute.

In the full year 1937 there were 37 economy flow transactions averaging five hours and twenty-eight minutes apiece; there were 6 emergency transactions averaging six minutes apiece.

For the entire year 1937 there were two economy flow transactions, averaging eight hours and fifty-two minutes apiece, and there were three emergency transactions averaging one hour and twenty-three minutes apiece.

For the period January 1, 1938 to March 14, 1938 there was one emergency transaction which lasted for two hours and thirty-five minutes.

Then the aggregate is shown. For the period August 26, 1935 to March 14, 1938 there was an aggregate of 60 transactions involving emergency and economy flow. The aggregate elapsed time for the 60 transactions was ten days, twenty-one hours, forty-five minutes or an average of four hours and twenty-two minutes apiece.

The number of days between August 26th, 1935 and March 14, 1938, was 930. During that period the total elapsed time of emergency and economy flow transactions running from Public Service Electric and Gas Company to Staten Island Edison Corporation amounted to ten days, twenty-one hours, forty-five minutes. That would be about 1.2 per cent of the time, roughly.

The money involved in those transactions shows that during the period—I guess we can take the k. w. h. first. During the period August 26, 1935 to December 31, 1935, Staten Island Edison Corporation took 51,800 kilowatt hours as economy flow, and that cost them $231.44.

The emergency was so short during that period that there was no kilowatt hour flow billed; but they were charged $14.70 as a demand charge.

In November 1935, the Public Service Electric and Gas Company billed the Staten Island Edison Corporation $250.41 for the annual adjustment on their emergency charge in accordance with the terms of the contract, and that adjustment covered the twelve months ended November 30, 1935.

But I did not make any attempt to segregate it as between the periods, and I put in the whole sum. But we must understand that $250.41 covered from November, 1934 to November, 1935.

So with that explanation the aggregate amount of money that the Staten Island Edison Corporation paid to Public Service Electric and Gas Company for emergency and economy flow energy from August 26, 1935 to December 31, 1935 was $496.55.

Now, for the entire year 1936 Staten Island Edison Corporation bought 329,600 kilowatt hours of economy flow energy for which they paid $1,321.96.

They bought 3,725 kilowatt hours of emergency energy on which the demand charge and energy charge totaled $1,024.79.

Now, that annual adjustment charge of which I spoke some few minutes ago from November 1935 to November 1936 amounted to $144.66.

So for the year 1936 Staten Island Edison Corporation paid to Public Service Electric and Gas Company for economy energy, for emergency energy, and for the annual adjustment on the emergency energy flow a total of $2,491.41.

For the calendar year 1937 Staten Island Edison Corporation bought 13,600 kilowatt hours of economy flow energy for which they paid $89.63. They bought 3400 kilowatt hours of emergency energy for which the energy and demand charge amounted to $173.90.

The annual adjustment charge under the terms of the contract for emergency flow was $16.84.

So for the year 1937 Staten Island Edison Corporation paid to Public Service Electric and Gas Company for emergency and economy flow a total of $280.37.

During the period January 1, 1938 to March 14, 1938—and these dates are inclusive—Staten Island Edison Corporation took 1,000 kilowatt hours of energy on emergency flow for which they paid $48.00. Then there is a total for the entire period.

Q. With respect to the column entitled "duration", you do not mean to imply that the energy which is shown

was necessarily flowing for the entire period listed under that column for any one transaction, do you? Those are the outside limits? Is that not correct?

A. As I understand it, these are the outside limits for any particular flow. It does not mean that there was a continuous flow during the period, or it might. It all depends. The records do not disclose that there was a continuity of flow or lack of continuity of flow. So, to be on the safe side, I took the outside limits.

Q. Purely from a dollars and cents standpoint, Mr. Morris, leaving out any indefinite and intangible benefits to Staten Island from these purchases, would you say that the total of these transactions for the entire period for any given year in the period or for any given month in the period, from a dollars and cents standpoint are of any significance to Staten Island Edison Corporation?

MR. McALLISTER: I object to that as a conclusion that is not within the general knowledge of this witness as he has qualified himself in this case.

MR. WESTON: Let me qualify him first.

BY MR. WESTON:

Q. Mr. Morris, do you know the total operating revenues of Staten Island Edison Corporation and the total expenses of Staten Island Edison Corporation in connection with the generation of their electricity, approximately and in general?

MR. McALLISTER: I don't think that is qualifying the witness.

EXAMINER SPENCER: He has not finished yet. Let's see what he is going to ask him and see if he is going to qualify him.

(Continued on page 473, Volume II)